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14. ABSTRACT Since the mid-1990's, the Al Qaeda Network has expressed the desire to obtain a nuclear or radiological weapon for use against the United States. While international protocols exist that are designed to inhibit acquisition by non-state actors and proliferation to rogue states, it is still possible for Al Qaeda to obtain a nuclear or radiological weapon capability. If they are successful in their pursuit of a weapon, the task facing the United States becomes prevention of a successful attack on the U.S. homeland. As international illicit trafficking efforts have grown more sophisticated, Al Qaeda and other terrorist organizations increasingly use criminal networks and criminal-like techniques to fund their efforts. Thus, preventing cooperative efforts between a terrorist organization and a criminal network to smuggle a weapon of mass destruction into the United States has become a part of our national strategy.

This paper posits that while current counter illicit trafficking efforts are unable to stop the flow of illicit goods into the United States, they influence trafficking behaviors and introduce interdiction risk. These behavioral changes and risk, when combined with differing organizational goals of traffickers and terrorists, inhibit cooperative efforts between Al Qaeda and international trafficking organizations. As a result, continued pursuit of diverse means to counter illicit trafficking networks should be an essential component in the strategy to prevent the Al Qaeda Network from conducting a weapon of mass destruction attack on the United States homeland.

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PROTECTING THE HOMELAND: THE IMPORTANCE OF COUNTER-ILLICIT TRAFFICKING TO PREVENT AN ATTACK WITH WEAPONS OF MASS DESTRUCTION

by

Jonathan P. Kline

Commander, United States Navy

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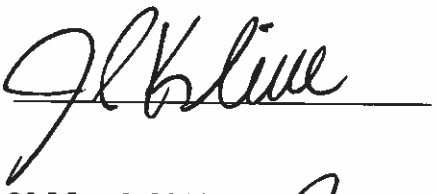
A paper submitted to the Faculty of the Joint Advanced Warfighting School in partial satisfaction of the requirements of a Master of Science Degree in Joint Campaign Planning and Strategy. The contents of this paper reflect my own personal views and are not necessarily endorsed by the Joint Forces Staff College or the Department of Defense.

This paper is entirely my own work except as documented in footnotes.

Signature: 

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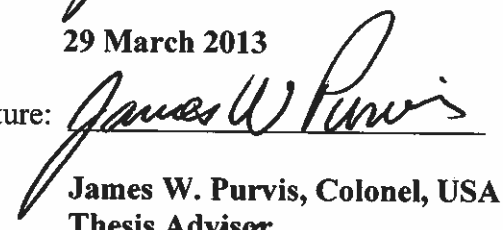
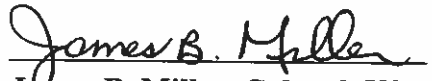
Signature: 

James W. Purvis, Colonel, USA
Thesis Advisor

Approved by:

Signature: 

Dr. Keith Dickson
Committee Member

Signature: 

James B. Miller, Colonel, USMC
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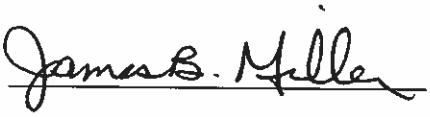
Signature: 

James B. Miller, Colonel, USMC
Director, Joint Advanced Warfighting School

ABSTRACT

Since the mid-1990's, the Al Qaeda Network has expressed the desire to obtain a nuclear or radiological weapon for use against the United States. While international protocols exist that are designed to inhibit acquisition by non-state actors and proliferation to rogue states, it is still possible for Al Qaeda to obtain a nuclear or radiological weapon capability. If they are successful in their pursuit of a weapon, the task facing the United States becomes prevention of a successful attack on the U.S. homeland. As international illicit trafficking efforts have grown more sophisticated, Al Qaeda and other terrorist organizations increasingly use criminal networks and criminal-like techniques to fund their efforts. Thus, preventing cooperative efforts between a terrorist organization and a criminal network to smuggle a weapon of mass destruction into the United States has become a part of our national strategy.

This paper posits that while current counter illicit trafficking efforts are unable to stop the flow of illicit goods into the United States, they influence trafficking behaviors and introduce interdiction risk. These behavioral changes and risk, when combined with differing organizational goals of traffickers and terrorists, inhibit cooperative efforts between Al Qaeda and international trafficking organizations. As a result, continued pursuit of diverse means to counter illicit trafficking networks should be an essential component in the strategy to prevent the Al Qaeda Network from conducting a weapon of mass destruction attack on the United States homeland.

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INTRODUCTION

In the post-9/11world, it is a foregone conclusion that terrorists, specifically the Al Qaeda Network (AQN), seek to attack the United States homeland using a weapon of mass destruction (WMD). Public statements and web postings by Al Qaeda leadership demonstrate that their aims are not only to inflict physical casualties and destruction, but also emotional and financial damage on the United States, its citizens, and interests.[1] The threat presented to the United States by Al Qaeda and its affiliates is ever-present, shaping national strategies, policies, and postures which seek to defend the country.[2] Criminal organizations and their illicit trafficking networks used to smuggle drugs, humans, weapons, and money throughout the world present opportunities for the AQN to introduce a WMD into the United States. While preventing Al Qaeda from leveraging these illicit networks is a critical component of defending the homeland from attack, it does eliminate the risk of attack. This paper will demonstrate that past and present Counter Illicit Trafficking (CIT) efforts, while not eliminating illicit trafficking, have influenced trafficking behaviors and impacted the success of trafficking events. By continuing to pursue diverse strategies to combat illicit trafficking networks, the United States can maintain a threat of detection and interdiction which represents an unacceptable operational risk to terrorist organizations seeking to bring WMD into the United States to conduct an attack.

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[1] Gregory Keeney and Detlof von Winterfeldt. "Identifying and Structuring the objectives of terrorists," *Risk Analysis* 30, no 12 (December 2010): 1803, https://www.hsdl.org/?view&did=30371 (accessed January 26, 2013).

[2] Preventing a terrorist attack is a specific item in the 2010 National Security Strategy, p. 20; 2011 National Military Strategy, p.4; throughout the 2011 National Strategy for Counterterrorism; and 2007 National Strategy for Homeland Security, p.1.

Stating that "there is no greater threat to the American people than weapons of mass destruction, particularly the danger posed by the pursuit of nuclear weapons by violent extremists,"[3] the 2010 National Security Strategy (NSS) reinforced the policy of the United States to pursue terrorist organizations and prevent them from obtaining and using WMD. The strategies necessary to accomplish these goals touch all aspects of governance and continue to extend globally the U.S. instruments of power. The challenge of meeting this goal is to identify the likely approaches of a terrorist network, then eliminate those options to reduce their freedom of action.

Preventing the introduction of WMD into the United States in order to prevent a terrorist attack requires an examination of whether or not such an event is within the realm of the possible. Accomplishing such a mission requires a terrorist organization to smuggle a WMD across the border, making it worthwhile to examine the mechanisms which already exist to smuggle illicit goods. Illicit trafficking of goods is a global business, with the United Nations Office on Drugs and Crime estimating the total value of illicit goods trafficked in 2011 at $1.3 trillion.[4] The established and successful routes, methods, and extent of trafficking networks operated by illicit trafficking organizations appear to be ripe for cooperation with, or exploitation by, a terrorist organization. A compounding factor for the challenge presented by an established network is the numerous avenues of approach to the homeland that are vulnerable to exploitation. By

[3] U.S. President, *National Security Strategy* (Washington, DC: Government Printing Office, May 2010), 4.

[4] United Nations Office on Drugs and Crime, *Action Against Transnational Organized Crime and Illicit Trafficking, Including Drug Trafficking (2011 – 2013)*, April 2011, 10, http://www.unodc.org/documents/commissions/WG-GOVandFiN/Thematic_Programme_on_Organised_Crime_-_Final.pdf (acessed Nov 12, 2012).

examining these issues, a framework is constructed for a successful smuggling event, allowing further analysis of prevention.

Understanding that it is possible to move illicit goods into the country, it is imperative to examine the likelihood of trafficking in WMD. While multiple strategies make reference to the pursuit of WMD by terrorists, finding evidence of such attempts is central to validating the efforts expended to prevent their acquisition, transport, and use. Additionally, the mere existence of trafficking networks and routes does not immediately translate into collaboration between traffickers and Foreign Terrorist Organizations (FTOs). Their differing structures, ideologies, and motives present areas of commonality and conflict that render uncertain a symbiotic relationship. A trafficking event and attack are unlikely if the FTO is unable to obtain a WMD. International efforts to secure WMD, their precursors and constituent parts, and prevent their trafficking are integral to assessing the potential for an attempt to enter the United States and conduct an attack.

A final area of study is the effort to prevent illicit trafficking in all forms. Though drugs, weapons, humans and money are all forms of trafficking, trafficking in WMD presents a particular concern because of the immense damage a WMD can cause physically and psychologically. Establishing that the mechanisms required for trafficking WMD do not vary greatly from known trafficked goods allows evaluation of current efforts to detect and interdict illicit trafficking events for their effectiveness to counter WMD trafficking. Integral to ongoing counter-trafficking efforts are the international partnerships and domestic programs in place to impede and alter trafficking attempts.

While the focus of this paper is on the external approach of a terrorist organization with a foreign procured WMD, the risk of a domestic terror attack, such as

the Oklahoma City bombing in 1995, remains a valid concern. The distinctive nature of that attack, carried out by a U.S. citizen with domestically procured and assembled weaponry,[5] is an area worthy of further study. With more than 50 Department of State designated FTOs,[6] the threat of attack extends beyond the AQN. However, given that anti-terrorism policy and action over the past 11 years have been focused on the AQN, and the fact that the AQN leadership has made frequent and overt WMD threats against the United States,[7] this paper focuses on the threat posed by the AQN. Because of the attention given to increasing the security structure in the aviation industry following 9/11, this paper will concern itself primarily with identifying vulnerabilities and opportunities for interdiction in maritime and ground means of transport. As a result of domestic availability of chemical and biological agents which could be used to conduct a domestic terror attack without requiring international transport,[8] this paper will focus on

[5] Timothy McVeigh, a U.S. citizen and U.S. Army veteran, was tried, convicted, and sentenced to death on eleven counts stemming from the bombing of the Alfred P. Murrah Federal Building in Oklahoma City, Oklahoma, that resulted in the deaths of 168 people. More information from: University of Missouri-Kansas City School of Law, "Decision of the Tenth Circuit Court of Appeals, Affirming the Conviction of Timothy McVeigh," University of Missouri-Kansas City, http://law2.umkc.edu/faculty/projects/ftrials/mcveigh/mcveigh10thcircuit.html (accessed February 6, 2013).

[6] U.S. Department of State, "Foreign Terrorist Organizations," U.S. Department of State, http://www.state.gov/j/ct/rls/other/des/123085.htm (accessed November 22, 2012).

[7] Keeney, "Identifying and Structuring," 1806.

[8] Two domestic attacks using chemical/biological agents that have been confirmed since 1984 were conducted using agents obtained from within the United States. The first was the Rajneeshee Cult using salmonella in Oregon in 1984. For additional information on this attack, see W. Seth Carus, "The Rajneeshees (1984)," in *Toxic Terror: Assessing Terrorist Use of Chemical and Biological Weapons*, ed. Jonathan B. Tucker (Cambridge, MA: MIT Press, 2000). The second attack was the 2001 mailing of anthrax via the U.S. Postal Service (USPS). Though recent review by the National Academy of Sciences has called into question the rigor of the FBI scientific process, the investigation demonstrated that the means existed to obtain the anthrax domestically. For more information on the anthrax attack, see: Federal Bureau of Investigation, "Famous Cases & Criminals: Amerithrax or Anthrax Investigation," Federal Bureau of Investigation, http://www.fbi.gov/about-us/history/famous-cases/anthrax-amerithrax (accessed February 6, 2013). Additionally, the toxin ricin, while limited in potential to be used as a WMD, has been investigated as a potential weapon for a terror attack. Since 1991, there have been at least five ricin-related arrests or incidents within the U.S. For more information on ricin as a potential terror weapon, see

identifying and preventing trafficking in radiological materials and nuclear devices. Finally, this paper focuses on non-ballistic delivery of nuclear weapons; therefore, Al Qaeda acquiring a state-sponsored nuclear weapon with ballistic capability through cooperative dealings, criminal transactions, or the failure of an unstable regime will not be addressed.

Identifying the enduring interests of the United States as security, prosperity, values, and international order,[9] the NSS provides the political and strategic guidance upon which to build the mechanisms to prevent the occurrence of a terrorist attack. From the NSS mandate of deterring or preventing a major terrorist attack on the U.S. homeland using WMD,[10] the nexus between FTOs and international trafficking organizations[11] (ITOs) has become a specifically stated concern of national policy.[12] A literature review reveals a multitude of articles, monographs, hearings and opinions concerning the possibility of a terrorist strike enabled by leveraging the trafficking methods of an ITO.

As the U.S. budget continues to be uncertain and forces continue to be committed elsewhere, direct approaches to the homeland are vulnerable to exploitation by trafficking organizations. A lack of interdiction assets means that traditional methods of trafficking continue to flourish, even while technological advances lead to development of newer,

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Congressional Research Service, *Ricin: Technical Background and Potential Role in Terrorism*, Dana Shea, Frank Gottron, RS21383 (Washington, DC: Government Printing Office) December 2010.

[9] U.S. President, "National Security Strategy," 17.

[10] U.S. President, "National Security Strategy," 19-20.

[11] For the purposes of this paper, international trafficking organization (ITO) will be used to represent all organizations involved in trafficking solely as a criminal enterprise. The divergence between trafficking organizations and criminal organizations is further explored in Chapter 1 of the paper.

[12] Concerns about coordination between Transnational Criminal Organizations and Foreign Terrorist Organizations trafficking WMD is cited in the National Military Strategy, p. 6; Strategy to Combat Transnational Organized Crime, p.6; the National Southwest Border Counternarcotics Strategy, p. 17; the 2012 U.S. Southern Command posture statement, March 6, 2012, p. 9; and JIATF-S Director statement to Congress of June 19, 2012.

harder to detect trafficking methods. The predominant product moved into the United States via illicit trafficking continues to be drugs. The potential for trafficking to evolve to include movement of WMD is furthered by advances in trafficking technology, increasing state-sponsorship of transnational criminal organizations, and expansion of "hostile" nation interests in Central and South America.[13] Continuing to innovate and pursue asymmetric tactics to combat trafficking is a key element in prevention of a shift in trafficking from drugs to WMD.

The expenditure of resources to interdict illicit trafficking is vital to ensure the protection of the United States. Increasing resources applied to detection and interdiction at source zone ports, U.S. ports of entry, along U.S. borders, and in the transit zone[14] represents an opportunity to deny movement of illicit drugs, weapons, and people into the country. As trafficking organizations apply technological advances to further their trafficking goals, the costs and resources required for detection and interdiction make an impenetrable physical defense impractical, allowing successful trafficking events to occur. Successful evasion of detection and interdiction by trafficking organizations provides a potential model and available means to the AQN in its attempts to launch direct attacks on the United States. The threat of mimicking the model or coordinating the means represents a palpable threat that must be prevented.

[13] Douglas Farah, *Transnational Organized Crime, Terrorism, and Criminalized States in Latin America: An Emerging Tier-One National Security Priority*, (Carlisle Barracks, PA: Strategic Studies Institute, August 2012), 6-11, http://www.strategicstudiesinstitute.army.mil/pubs/display.cfm?pubid=1117 (accessed January 26, 2013).

[14] Per the Office of National Drug Control Policy, the transit zone is considered to be a six million square mile area that encompasses Central America, Mexico, the Caribbean Sea, the Gulf of Mexico, and the eastern Pacific Ocean through which smugglers move their contraband.

CHAPTER 1: DEFINING THE WMD PROBLEM

As a result of their implication in the attacks on September 11, 2001, the Al Qaeda Network has been a focus of U.S. national strategy and military power for the past 11 years. This focus has led to relentless pressure on AQN leadership, the death or capture of a significant portion of their pre-9/11 leadership, and significant disruption of the organization globally. In spite of this effort, the AQN has demonstrated its desire to continue to fight and maintain influence in the Islamic world, expanding throughout the Middle East, northern Africa, and Indonesia, and continuing attacks on U.S. interests overseas. Though it remains a goal of the AQN, there has not been a successful attack on the U.S. homeland since 9/11.

In the years since 9/11, repeated statements from AQN leadership have reinforced the idea that the AQN maintains the goal of inflicting injury upon the United States and its citizens.[1] Given those statements and the attacks of 9/11, it is not unreasonable to think that the organization seeks greater capacity to strike the U.S. homeland again. Even though the U.S. and international community recognized the threat of terrorists obtaining WMD prior to 9/11, efforts to prevent acquisition of a nuclear device by an extremist organization were only increased in the aftermath of the successful 9/11 attack.

Identifying the Threat Organizations

In order to understand the problem presented by terrorist organizations cooperating with traffickers to deliver weapons of mass destruction to the U.S. homeland,

[1] Keeney, "Identifying and Structuring," 1805-1807.

one must first understand the organizations and their motives. The author has observed that often there is confusion in Counter Illicit Trafficking (CIT) writings because of the intermingling of terms referring to those involved in trafficking and a desire to define a homogenous threat through the use of all-encompassing terminology. The organizations of interest in this exploration of trafficking are Foreign Terrorist Organizations, Transnational Criminal Organizations, and Drug Trafficking Organizations. To be effective, CIT efforts need to recognize the characteristics of these organizations, as well as the means and motives with which they operate. Understanding their similarities and differences can inform the determination of potential collaboration opportunities. While the term "narcoterrorist" is common to the discussion of CIT, it is also ill-defined. Per Joint Publication 3-07.4, "narcoterrorist" defines two separate and distinct organizations or groups of people. The first group, generally described by the tactics of Pablo Escobar, is a drug trafficking organization which uses terrorist tactics to enable and protect their drug trade. The second group is a terrorist organization that uses the proceeds of the drug trade as a means to fund their ideological agenda.[2] It is important to note that not all terrorist organizations are involved in the drug trade, and not all drug traffickers employ terrorist tactics; therefore, the term narcoterrorist, even with two distinct definitions, does not capture the full spectrum of those involved in illicit trafficking. For this examination of illicit trafficking, the term narcoterrorist will not be used.

As defined by Title 8 USC Section 1189, Foreign Terrorist Organizations are foreign organizations that engage in or retain the capability to engage in terrorist activities that are politically motivated, including: violent acts perpetrated against

[2] U.S. Joint Chiefs of Staff, *Joint Counterdrug Operations*, Joint Publication 3-04.7 (Washington DC: Joint Chiefs of Staff, June 13, 2007), I-10-11.

noncombatant targets; highjacking; assassination; the use of biological, chemical, or nuclear weapons, or other weapons for other than mere personal gain; and which threaten the security of the United States or United States nationals.[3] This section also authorizes the Secretary of State to designate FTOs. While an FTO may use violence and monetary gain to fund their activities, what separates them from a criminal organization is the political motivation behind their attacks.

While it appears that no universally accepted definition for Transnational Criminal Organization (TCO) exists, the White House "Strategy to Combat Transnational Organized Crime" defines a TCO as a self-perpetuating association of individuals operating across borders for the purpose of obtaining power and influence, using violence or other acts to intimidate, with economic gain as their primary goal.[4] TCOs engage in both illegitimate and legitimate businesses as they seek to expand their organization, with no single criminal enterprise as a focus. Illegal activities may include, but are not limited to: bribery of public officials; infiltration of financial networks; cybercrime; human smuggling and trafficking; weapons trafficking; drug trafficking; and intellectual property theft.[5] While TCOs may use violence, and their tactics may emulate the tactics of terrorist organizations, the key distinction of a TCO is that its primary goal is economic gain.

A Drug Trafficking Organization (DTO) focuses primarily on the production, transportation, and distribution of illegal drugs. DTOs range from low-level, localized

[3] *Designation of Foreign Terrorist Organizations*, US Code, Title 8, Chapter 12, subchapter II, part II, section 1189.

[4] U.S. President, *National Strategy to Combat Transnational Organized Crime: Addressing Converging Threats to National Security* (Washington, DC: Government Printing Office), inside cover.

[5] Ibid., 6-7.

networks to international organizations that use violence, government corruption, and sophisticated trafficking mechanisms to distribute drugs. Mexican organizations are the most commonly cited examples of DTOs.[6] Similar to TCOs, a DTO's primary goal is preservation of their business and economic gain.

While TCOs and DTOs are distinct from one another based on the breadth of their business enterprises, their common link is the goal of profitability and a proficiency in getting illicit goods to their markets. While interdiction of trafficked goods represents a risk, the organization's motivation for accepting that risk is found in the demand for their products at the destination and the economic incentive of delivering and selling those products. An FTO, conversely, is motivated by a political agenda. In the case of conducting an attack on the United States, an FTO is concerned with gaining access to the homeland with the means to conduct the attack. The common goal of undetected access into the United States with illicit products (drugs, WMD, humans, cash, weapons) aligns DTOs and TCOs with FTOs. As international traffickers, the FTO can collaborate with or contract them, or mimic their techniques in order to successfully execute a trafficking event. As a result, the characteristic of concern common to all three organizations is the need for reliable trafficking networks. Understanding these three distinct groups provides a basis for investigating how they might intersect and leverage capabilities to further their individual enterprises.

[6] While no specific definition of Drug Trafficking Organizations could be located in an authoritative document, the term is used extensively in Joint Pub 3-07.4 (Joint Counterdrug Operations), the National Drug Control Strategy, and the Strategy to Combat Transnational Organized Crime. Differentiating between TCOs and DTOs permits assessment of potential overlap with FTOs, and therefore the possibility of collaboration between the organizations. While the 2011 National Drug Threat Assessment uses TCO as an encompassing term that includes DTOs, the discussion orients the reader to differences that are germane in later sections.

Is the Al Qaeda Network Seeking WMD to Strike the United States?

The argument that Al Qaeda seeks WMD, specifically nuclear capability, can be made by examining scholarly analysis, public statements, and government reporting. For their 2010 work "Identifying and Structuring the Objectives of Terrorists," Gregory Keeney and Detlof von Winterfeldt studied the written and broadcast statements of Al Qaeda leadership. From these statements, they assessed the ideology of the AQN, formulating what they refer to as Fundamental Objectives Related to Military Outcomes, listed below:

(1) Attack U.S. targets.
(2) Cause economic loss for the United States.
(3) Expel the Americans from Iraq.
(4) Kill large numbers of infidels.[7]

Statements contributing to the formulation of these objectives, specifically the objectives to kill large numbers of infidels, include a 1998 *Time Magazine* interview with Osama bin Laden during which, in answering a question about Al Qaeda pursuit of nuclear and chemical weapons, he states "Acquiring weapons for the defense of Muslims is a religious duty. If I have indeed acquired these weapons, then I thank God for enabling me to do so."[8] Additionally, a 2002 statement attributed to Suleiman Abu Gheith, an Al Qaeda spokesman, says that Al Qaeda has the "right to fight them [the Americans] with chemical and biological weapons" and to kill four million Americans.[9] According to the

[7] Keeney, "Identifying and Structuring," 1805 – 1808.

[8] Osama Bin Laden, quoted by David Ignatius, "Portents of a Nuclear Al Qaeda," *Washington Post*, October 18, 2007, http://www.washingtonpost.com/wp-dyn/content/article/2007/10/17/AR2007101702114_pf.html (accessed November 23, 2012).

[9] Suleiman Abu Gheith, quoted by World Net Daily, "Muslims Have 'Right to Kill 4 Million': Al-Qaida says Islam requires 'fair exchange' for U.S. 'oppression'," *World Net Daily*, June 12, 2012, http://www.wnd.com/2002/06/14218/ (accessed November 23, 2012)

9/11 commission report, as far back as 1997, the Bin Laden unit of the Central Intelligence Agency assessed that Osama bin Laden was attempting to obtain nuclear material.[10] In 1999, United States and allied intelligence agencies again received indications that the AQN was attempting to acquire nuclear weapons and conducting training in chemical weapons.[11] In his article for ForeignPolicy.com, "Al Qaeda's Pursuit of Weapons of Mass Destruction: The authoritative timeline," Rolf Mowatt-Larssen,[12] a senior fellow at the Harvard Kennedy School, chronicles sustained attempts by Al Qaeda to obtain and develop nuclear and chemical weapons for use against the United States beginning in 1996.[13] In his 2008 online book "Exoneration," Ayman al-Zawahiri, former leader of the Egyptian Islamic Jihad and a founding member of Al Qaeda, builds the religious case for using weapons of mass destruction against the United States by quoting Koranic verses and Islamic writings as "repaying like for like." [14] He uses his estimate of nearly 10 million Muslims killed over the previous decade to justify that "if a bomb were dropped on them (Americans), destroying 10 million of them and burning as much of

[10]National Commission on Terrorist Attacks Upon the United States, *The 9/11 Commission Report* (Washington, DC: Government Printing Office, July 2004), 109.

[11] Ibid., 141.

[12] Rolf Mowatt-Larssen is a senior fellow at Harvard Kennedy School's Belfer Center for Science and International Affairs. Prior to his appointment at Harvard, he led the government's efforts at the Department of Energy and the CIA to find and track potential terrorists and to prevent a nuclear attack on the U.S.

[13] Rolf Mowatt-Larsen, "Al Qaeda's Pursuit of Weapons of Mass Destruction: The authoritative timeline," Foreign Policy, entry posted January 25, 2010, http://www.foreignpolicy.com/articles/2010/01/25/al_qaedas_pursuit_of_weapons_of_mass_destruction (accessed November 23, 2012).

[14] Ayman al-Zawahiri, *Exoneration* (Washington, DC: Federation of American Scientists, 2008), 171, translated on www.fas.org. http://www.fas.org/irp/dni/osc/exoneration.pdf (accessed December 3, 2012).

their land as they have burned of Muslim land, that would be permissible without any need to mention any further proof."[15]

The AQN has an established history of attacking the United States and its interests, causing significant destruction and death. As early as the World Trade Center bombing in 1993, the influence of Al Qaeda was seen in attacks targeting the United States. In May 1998, Osama bin Laden stated that "killing the Americans and their allies—civilians and military—is an individual duty for every Muslim who can carry it out in any country where it proves possible…"[16] Their patience and thoroughness is evident in the years of planning for the 9/11 attacks, as well as in subsequent attempts to strike the U.S. homeland and cause mass casualties, such as the failed Times Square bombing in 2010[17] and the thwarted underwear bomb plot in 2012 planned to coincide with the death of Osama bin Laden.[18] Combined with the success of domestic and overseas attacks, this persistence provides compelling reason to take seriously their repeated references to obtaining and using WMD and nuclear capabilities.

[15] Ibid., p. 174

[16] Osama Bin Laden, World Islamic Front statement urging jihad against Jews and crusaders, released: Feb 23, 1998, G. Kepel and J-P Milelli, eds., *Al-Qaeda in its Own Words* (Cambridge, MA: Belknap Press of Harvard University Press, 2008), 54.

[17] The failed Times Square bombing in May 2010 was planned by Faisal Shahzad, with training and financing provided by the AQN. Acording to Shahzad's testimony, planning and training for the attack began in earnest in June 2009. Details from testimony in the article "Inside the Mind of the Times Square Bomber,"by Lorraine Adams, as published in *The Observer*, September 18, 2010, http://www.guardian.co.uk/world/2010/sep/19/times-square-bomber (accessed December 12, 2012).

[18] In May 2012, a plot to blow up an airliner using an improved "underwear bomb" was disrupted in Yemen. The plot was based on improving the underwear bomb that failed to detonate on Christmas Day in 2009 and presumed to have been the work of Al Qaeda's master bomb-maker Ibrahim Hassan al-Asiri. Eyder Peralta, "CIA Thwarts New, More Sophisticated Underwear Bomber," *The Two-Way, Breaking News from NPR*,May 7, 2012, http://www.npr.org/blogs/thetwo-way/2012/05/07/152207969/reports-cia-thwarts-new-more-sophisticated-underwear-bomber (accessed December 12, 2012).

What Weapons of Mass Destruction Are a Concern?

Joint Publication 3-40, *Combating Weapons of Mass Destruction,* defines WMD as "chemical, biological, radiological, or nuclear weapons capable of a high order of destruction or causing mass casualties and exclude the means of transporting or propelling the weapon where such means is a separable and divisible part from the weapon."[19] Though many alternate definitions exist,[20] the preceding one suffices for discussion of preventing terrorist attack on the U.S. homeland with a WMD. Considering domestic availability of chemical and biological agents, and in alignment with the NSS concern of proliferation of nuclear weapons to violent extremists,[21] the discussion of preventing the smuggling of a WMD into the United States will be further limited to focus on nuclear weapons and radiological material in this paper. Nuclear weapons of concern include Improvised Nuclear Devices (IND) and portable nuclear weapons (suitcase/briefcase/backpack bombs). Radiological material includes byproducts from the creation of nuclear power, as well as material with commercial use.

When discussing nuclear terrorism, the focus is often on Improvised Nuclear Devices. Like a nuclear weapon, an IND causes an explosion produced by the fusion or fission of atoms to produce intense heat, light, air pressure, and radiation, and requires

[19] U.S. Joint Chiefs of Staff, *Combating Weapons of Mass Destruction,* Joint Publication 3-40 (Washington, DC: Joint Chiefs of Staff, June 10, 2009), GL-6.

[20] In addition to the different definitions located by the author in U.S. Code and government agency glossaries, the paper "Defining Weapons of Mass Destruction" by W. Seth Carus identified that more than 20 different definitions exist in U.S. federal agencies alone, with additional definitions in international law and individual U.S. state laws. As this paper focuses on radiological and nuclear devices, the DoD definition is adequate. Seth W. Carus, *Defining Weapons of Mass Destruction* (Washington, DC: National Defense University Press, January 2012).

[21] U.S. President, *National Security Strategy,* 4.

highly processed plutonium or uranium.[22] The mechanism of constructing an IND is beyond the scope of this paper; however, the size of a potential device is instrumental in the assessment of its likely movement and mechanism of use. In their paper "Improvised Nuclear Devices and Nuclear Terrorism" prepared for the Weapons of Mass Destruction Commission in 2005, Charles Ferguson and William Potter postulate that a gun-type[23] IND using Highly Enriched Uranium (HEU) would be the most likely form of device built by a terrorist organization, and that it "would likely be heavy—perhaps weighing up to a ton…"[24] Estimating a gun-type device at nine feet long and 28 inches in diameter,[25] an IND would be similar in size to "Little Boy," the bomb dropped on Hiroshima, though it would weigh significantly less.[26] In theory, an IND obtained or built by a terrorist organization would require the same technical sophistication of a state-built nuclear weapon, but without the associated ballistic delivery mechanism ascribed to national nuclear arsenals. While smaller than a strategic nuclear weapon missile delivery system,

[22] U.S. Department of Health and Human Services, *Terrorism and Other Public Health Emergencies: A Reference Guide for Media* (Washington, DC: Government Printing Office, September 2005), 118. http://www.phe.gov/emergency/communication/guides/media/documents/hhsmedisreferenceguidefinal.pdf (accessed November 17, 2012).

[23] Charles Ferguson and William Potter, *Improvised Nuclear Devices and Nuclear Terrorism* (Stockholm, Sweden: Weapons of Mass Destruction Commission). A gun-type nuclear device uses conventional explosives to cause the collision of two pieces of highly enriched uranium, setting off a nuclear chain reaction and ultimately a nuclear explosion. It is considered to be easier to build than an implosion-type device designed to create a super-critical mass of plutonium, and therefore is the more likely choice for a terrorist organization. Expert opinion is that a terrorist organization with sufficient resources could build a gun-type device within one year of commencing.

[24] Charles Ferguson, *Improvised Nuclear Devices*, 17.

[25] Saga Foundation, "A terrorist bomb," Saga Foundation, http://www.sagafoundation.org/quick_factsV2.html (accessed November 24, 2012)

[26] Little Boy was 120 inches in length by 28 inches in diameter and weighed 8,900 lbs. Information retrieved from multiple sources, including: Strategic-Air-Command.com, "Chart of Strategic Nuclear Bombs," Strategic-Air-Command.com, http://www.strategic-air-command.com/weapons/nuclear_bomb_chart.htm (accessed November 24, 2012).

an IND would still require significant resources to load and move from the location where it was assembled to the desired target.

A nuclear terror attack involving a so-called "briefcase" or "suitcase" bomb—a nuclear weapon small enough to be carried by a single person—gained notoriety as a threat largely based on a September 1997 CBS newsmagazine *60 Minutes* interview with General Aleksandr Lebed, former Russian National Security Adviser. In that interview, a follow-on to Congressional testimony delivered in May 1997, Gen Lebed claimed that the Soviets had built more than 250 suitcase bombs and that more than 100 of them with an explosive yield up to one-kiloton[27,28] were missing from the Russian nuclear arsenal.[29] His assertions that the Soviets constructed these devices were corroborated during Congressional testimony in October 1997 by Dr. Alexie Yablokov, a former environmental adviser to Russian President Boris Yeltsin.[30]

In the 1950s and 1960s, the United States produced a miniaturized nuclear weapon designated the W54, designed for tactical use against Soviet ground forces. The W54 had a yield between 10 tons – 1.0 kiloton, weighed 51 lbs, and was an egg-shaped

[27] Kiloton is the standard measure of explosive force defined by pounds of TNT required to achieve the same explosion. 1 kiloton = 1,000 tons = 2,000,000 lbs of TNT.

[28] It is estimated that detonation of a one-kiloton weapon in downtown Manhattan would: kill 200,000 people; injure an additional 200,000; produce fallout that could kill half of the exposed population within 3 miles within weeks; and destroy most buildings within eleven city blocks. More details available from: Council on Foreign Relations, "Responding to Nuclear Attacks," http://www.cfr.org/preparedness/responding-nuclear-attacks/p9570 (accessed December 14, 2012)

[29] Carey Sublette, "Alexander Lebed and Suitcase Nukes," NuclearWeaponArchive.org, http://nuclearweaponarchive.org/News/Lebedbomb.html (accessed December 13, 2012). In his statements, Gen Lebed claimed that the bombs were constructed for the KGB and were to be prepositioned and used in Europe and the U.S. for use in the event of war between the countries. The intent was to secretly build weapons caches that could be used to conduct targeted attacks on U.S. and Allied leadership.

[30] Sublette, "Alexander Lebed."

device approximately 11 inches by 16 inches.[31] Several versions of it were tested, with two variants deployed during the cold war: the Mk-54 Special Atomic Demolition Munition (SADM), a "backpack" weapon;[32] and the Davy Crockett, a projectile launched from either a 155-millimeter or 120-millimeter recoilless rifle.[33] The United States no longer maintains these types of weapons in its arsenals, reutilizing or discarding the nuclear material according to established protocols.

Though there has never been a Soviet-made briefcase-type nuclear device found, it is generally accepted that the devices existed, and nuclear security in Russia has been an international concern since the fall of the Soviet Union. Adding to that concern, Pakistani journalist Hamid Mir told the Australian Broadcasting Corporation in 2004 that Al Qaeda's Dr. Ayman Al-Zawahiri had bragged to him in a 2001 interview:

> If you have $30 million, go to the black market in central Asia, contact any disgruntled Soviet scientist and a lot of…dozens of smart briefcase bombs are available. They have contacted us, we sent our people to Moscow, to Tashkent (the capital of Uzbekistan), to other Central Asian states, and they negotiated, and we purchased some suitcase bombs.[34]

Additionally, while being interrogated at Guantanamo Bay, the 9/11 mastermind Khalid Sheikh Mohammed declared that Al Qaeda had a nuclear weapon hidden in Europe and

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[31] Carey Sublette, "Are Suitcase Bombs Possible?" NuclearWeaponArchive.org, http://nuclearweaponarchive.org/News/DoSuitcaseNukesExist.html (accessed December 13, 2012).

[32] Sublette, "Are Suitcase Bombs Possible?" Open source reference material indicates that the Mk-54 was a Navy-Marine Corps program designed for waterborne attack. The mission plan was insertion of a two-man team by parachute. The device would be floated to the target for detonation. After intitating the detonation sequence, the team would swim to an awaiting submarine or other high speed extraction vehicle. The device weighed 68 kg (150 lbs).

[33] Brookings, "The Davy Crockett," The Brookings Institution. http://www.brookings.edu/about/projects/archive/nucweapons/davyc (accessed December 13, 2012)

[34] As quoted by Anna Badkhen in her article "Al Qaeda Bluffing About Having Suitcase Nukes, Experts Say / Russians Claim Terrorists Couldn't Have Bought Them," *San Francisco Chronicle*, March 23, 2004. http://www.sfgate.com/news/article/Al-Qaeda-bluffing-about-having-suitcase-nukes-2776832.php (accessed December 13, 2012).

would unleash a "nuclear hellstorm" if Osama bin Laden were captured or killed.[35] In response to the Zawahiri allegation, Russian officials and U.S. security experts have both said it is unlikely that the AQN acquired such a device. In addition to the accounting of nuclear weapons that the Russians maintain,[36] Maxim Shingarkin, formerly in the Russian department responsible for nuclear weapons, stated that the Soviet Union had built only around 100 of the weapons, none since 1991, and that they were maintenance intensive and perishable, with a lifespan of only one to three years.[37] This estimate of the complexity and perishability of a briefcase-type device was echoed in an interview with General Vladimir Dvorkin, formerly of the Russian Strategic Rocket Forces.[38] Even with these assurances, the technical feasibility and historic stockpiles of the weapons ensures that they are a continued focus for defense of the U.S. homeland.

To conduct a nuclear attack, a terrorist organization is challenged by obtaining the necessary weapons-grade material, building, and moving an IND, and the theoretical difficulty of finding, purchasing, and transporting a suitcase bomb. In contrast, an organization seeking to conduct a radiological attack has more sources available to

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[35] Christopher Hope, Robert Winnett, Holly Watt and Heidi Blake, "WikiLeaks: Guantanamo Bay terrorist secrets revealed," *The Telegraph*, April 25, 2011, http://www.telegraph.co.uk/news/worldnews/wikileaks/8471907/WikiLeaks-Guantanamo-Bay-terrorist-secrets-revealed.html (accessed December 14, 2012).

[36] General Eugene Habiger, interview for "Russian Roulette: A report on the safety and security of Russia's Nuclear arsenal," *FRONTLINE*, PBS,1999, http://www.pbs.org/wgbh/pages/frontline/shows/russia/interviews/habiger.html (accessed December 13, 2012). In this interview, General Habiger, USAF, former commander of U.S. Strategic Command, reported on his visits to Russian nuclear facilities and with the Russian Commander-in-Chief of Rocket Forces. He stated that thorough and professional accounting and security systems were in place and that he believed Russian officials had accounting of their suitcase bombs.

[37] Badkhen, "Al Qaeda Bluffing."

[38] General Vladimir Dvorkin, interview for "Russian Roulette: A report on the safety and security of Russia's Nuclear arsenal," *FRONTLINE*, PBS,1999. http://www.pbs.org/wgbh/pages/frontline/shows/russia/interviews/dvorkin.html (accessed December 13, 2012).

acquire the material and is not constrained by the need to build a sophisticated or relatively large weapon. Radiological materials present a risk as a result of their availability for global commercial applications and their ability to be dispersed by conventional explosives (a Radiological Dispersal Device (RDD), or dirty bomb) or passively (a Radiological Exposure Device (RED)). However, in their 2003 report for the Center for Nonproliferation Security, Dr. Charles Ferguson, et al, found that:

> only a small fraction of the millions of commercial radioactive sources used globally, perhaps several tens of thousands, pose inherently high security risks because of their portability, dispersibility and higher levels of radioactivity. As a rule, these more dangerous commercial sources are those containing relatively large amounts of radioactivity…of seven reactor-produced radioisotopes: americium-241, californium-252, cesium-137, cobalt-60, iridium-192, plutonium-238 and strontium-90.[39]

Of these seven isotopes, cesium, cobalt, iridium, and strontium present a hazard from external exposure because the radiation they produce can penetrate the skin, while the americium, californium, and plutonium need to be ingested to cause significant damage.[40, 41]

While moving radiological material would generally not be constrained by the size of the material itself, an intensely radioactive isotope would present a danger to the terrorists in transport and preparation for use. If opting for an isotope that does not need

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[39] Charles Ferguson, Tahseen Khazi, and Judith Perera, "Commercial Radioactive Sources: Surveying the Security Risks," Center for Nonproliferation Studies, *Disarmament Forum*, no. 2 (2003): 23-24. http://www.peacepalacelibrary.nl/ebooks/files/UNIDIR_pdf-art1909.pdf (accessed November 24, 2012)

[40] Ibid.

[41] The three types of radioactive emissions that can cause damage to humans from RDD are alpha and beta particles, and gamma rays. Alpha particles can be inhibited from causing damage from external exposure by layers of clothing and dead skin. However, taken internally, alpha particles cause extensive cellular damage. Beta and gamma radiation can penetrate outer layers of protection, with gamma radiation being the most dangerous and requiring the greatest amount of shielding. Information derived from: Centers for the Study of Bioterrorism and Emerging Infections, *Radiological Terrorism Fact Sheet* (St. Louis, MO: St. Louis University Institute for Biosecurity, September 2002), http://www.bioterrorism.slu.edu/dirty/dirty.pdf (accessed November 24, 2012).

to be ingested, the level of radioactivity of the material necessary to make it a viable weapon would require significant shielding to protect those involved in handling and transporting it, and to prevent detection. If unable or unwilling to provide that level of protection, a terrorist could resort to sources that need to be ingested to cause damage, and handle the material safely by taking adequate precautions to prevent accidental ingestion.[42] These sources require development of a delivery mechanism that would cause ingestion, presenting challenges for effective use as a weapon.

Are Nuclear Weapons and Radiological Material Available?

Knowing that the AQN has professed a desire and is assessed to have made attempts to obtain and use WMD, including IND and radiological materials, it is necessary to determine the availability of the weapons and their constituent parts. Given the desire to inflict physical, economic and psychological damage on the United States and its interests, Al Qaeda could pursue an IND that is already built, the constituent parts to construct one themselves, or radiological material that could be used in an RDD or RED. Acquiring a completed IND, though appearing to be the most expedient path to an attack, presents challenges because of security measures in place to protect nuclear weapons and the difficulty of transporting such a device. Due to their financial and technical resources, it is considered within the capabilities of the AQN to construct an IND.[43] Again, however, the first obstacle that confronts them is acquiring the necessary fissile nuclear material. Finally, though radiological material is more widely available and less regulated, it presents less destructive potential while still presenting security

[42] Ferguson, "Commercial Radioactive Sources." 24.

[43] Ferguson, "Improvised Nuclear Devices," 7.

measures that would be necessary to circumvent in order to acquire and transport sufficient quantities to conduct an attack.

The availability of nuclear material to a terrorist organization is a function of the spread of nuclear technology, both for weapons and nuclear power generation, and the security of that material in the states that possess it. At present, the states known to possess nuclear weapons are China, France, India, Pakistan, Russia, the United Kingdom, and the United States. Israel, though neither confirming nor denying a nuclear weapons program, is suspected to possess nuclear weapons in some quantity. Much publicized in recent years has been the pursuit or suspected pursuit of nuclear weapons capability of North Korea, Iran , and Syria.[44]

Worldwide, 430 commercial nuclear reactors operate in 31 countries, with another 240 research reactors in 56 countries for production of medical and industrial isotopes.[45] While the presence of nuclear generation capabilities is widespread, the source for most commercial radiological material is isolated to six primary countries: Canada, South Africa, Russia, Belgium, Argentina, and France.[46] These nuclear and radiological material locations and the security and accounting protocols surrounding the production, transport, use, storage, and disposal of nuclear materials represent the key vulnerabilities that could be exploited by the AQN to obtain a WMD.

[44] Arms Control Association, "Nuclear Weapons: Who Has What at a Glance," Arms Control Association, http://www.armscontrol.org/factsheets/nuclearweaponswhohaswhat (accessed December 8, 2012).

[45] World Nuclear Association, "Nuclear Power in the World Today," World Nuclear Association, http://www.world-nuclear.org/info/inf01.html (accessed December 8, 2012).

[46] Ferguson, "Commercial Radioactive Sources," 24.

Constructing an IND requires specific technical expertise, specialized equipment, and HEU or weapons grade plutonium.[47] While not inconceivable that a nuclear state could lose control of a nuclear warhead or weapons-grade uranium or plutonium, the international community has established widely accepted agreements governing nuclear weapons control and fairly rigorous protocols for weapons-grade materials. The main focus of nuclear security and non-proliferation assistance over the past 20 years has been Russia and the republics of the Former Soviet Union. Providing around $500 million per year to Russia since the law was passed in 1991, the Cooperative Threat Reduction Program "has ensured the shipment of nuclear weapons out of Ukraine, Kazakhstan and Belarus, deactivated more than 7,600 nuclear warheads, destroyed 902 intercontinental ballistic missiles and 33 submarines and secured 24 nuclear weapons storage sites."[48] With the transfer of those arms, Ukraine, Kazakhstan, and Belarus have signed on to the nuclear Non Proliferation Treaty as non-nuclear arms states.[49] Providing international control of nuclear weapons and weapons-grade material, and establishing the prevention of nuclear terrorism as a shared international interest among nuclear armed states is an essential aspect of preventing a nuclear terror attack.

A more likely source of nuclear weapons or weapons-grade material is a developing or unstable state, one that is developing a weapons capability in secret, or one that engages in state-sponsorship of terrorist organizations. Without international oversight or assistance in development of their nuclear program, the loss or compromise of nuclear material is greater. A state could also develop a nuclear weapon and provide it

[47] Ferguson, "Improvised Nuclear Devices," 7.

[48] Will Englund, "Russia No Longer Wants U.S. Aid on Nuclear Arms Security," *Washington Post*, October 10, 2012.

[49] Arms Control Association, "Nuclear Weapons: Who Has What at a Glance."

to the AQN to conduct an attack which accomplishes state objectives while avoiding international condemnation for a nuclear attack.

As established earlier, both the United States and Soviet Union built nuclear briefcase bombs during the Cold War. While their existence at one time cannot be denied, at question is the current status of these portable nuclear weapons. The United States produced 300 of the MK-54 SADM through the late 1960s,[50] retiring them from the inventory by 1989.[51] While no official data could be located, accounts by General Lebed[52] place Soviet production of their lightweight nuclear device as high as 250 units. Maxim Shingarkin placed the number at 100, and stated that none had been produced since 1991.[53] As a result of the obfuscation surrounding the state of the Russian nuclear program, it is impossible to determine the current status of these weapons; therefore, an assumption should be made that the weapons still exist and present an opportunity for the AQN to obtain a nuclear capability.

Radiological material, because it is much more widespread and has legitimate use in civilian applications, presents a much more challenging non-proliferation scenario. Investigation into a 1997 radiation sickness incident in the former Soviet republic of Georgia revealed the extent of former Soviet Union "orphan sources"—lost stolen or abandoned radioactive materials. Between September 1997 and May 1999, investigators identified 352 contaminated sites in Georgia, with some devices buried on Soviet-era

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[50] Thomas Cochran, William Arkin, Milton Hoenig, *Nuclear Weapons Databook, Volume I, U.S. Nuclear Forces and Capabilities* (Cambridge, MA: Ballinger Publishing Company, 1984), 60.

[51] Nuclear Weapon Archive, "Complete List of All U.S. Nuclear Weapons," Nuclear Weapon Archive. http://nuclearweaponarchive.org/Usa/Weapons/Allbombs.html (acessed December 14, 2012).

[52] Sublette, "Alexander Lebed."

[53] Badkhen, "Al Qaeda Bluffing."

training grounds to teach soldiers how to maneuver on contaminated territory.[54] A 1987 radiological incident at an abandoned medical clinic in Goiania, Brazil, discussed in the next section, provides a stark example of the danger associated with uncontrolled equipment that contains radiological material. Though radiological control regulations were in place when the clinic opened in 1974, a compromise occurred after an ownership transfer and a dispute over the clinic equipment resulted in abandoning the medical equipment without notification of nuclear regulating officials.[55] These incidents highlight the importance of continued pursuit of orphaned material and engagement with users of radiological material to prevent their acquisition by the AQN.

Impact of Nuclear or Radiological Device Attack

The impacts of detonation of a nuclear weapon (either an IND or suitcase bomb) or radiological device would depend greatly on the location where the weapon was used. In a population or major commercial center, the impacts would be much greater both in death and infrastructure damage or destruction. In terms of economic and psychological impact, any nuclear or radiological attack on U.S. soil is likely to be significant. While an attack in a more remote location would reduce the death toll and decrease the infrastructure destruction, it would shatter the veil of security that currently envelops the United States and is relied upon by its citizens. While the fear of nuclear war against the Soviet Union dominated the Cold War years, since the Soviet demise nuclear attack scenarios have been reduced almost to the realm of history and fantasy. Not only would a nuclear or radiological terrorist attack in the United States impose dramatic costs for

[54] Lluma, "What the Russians Left Behind."

[55] International Atomic Energy Agency, "The Radiological Accident in Goiania," 1.

recovery from the attack, it would usher in a new era of security spending to further buttress U.S. defenses against another attack.

An IND is assessed to have a potential yield comparable to that of the bombs dropped on Nagasaki and Hiroshima, resulting in similar death and infrastructure destruction.[56] While maximum impact would be achieved by targeting a major population center (New York City, Washington DC, or Los Angeles, for example), the challenge of transporting and detonating such a large device without being detected could lead to use against softer targets with less security presence and scrutiny, or targets of opportunity, such as a port facility if a weapon were transported by maritime shipping container. As Al Qaeda has made priorities of killing Americans and inflicting economic and psychological damage, any use of nuclear device would further their objectives. Detonation of an IND in a major population center would result in immediate deaths, widespread destruction of buildings and critical infrastructure, and would be likely to induce panic and civil unrest. Using the attack on 9/11 as a comparison, the Institute for the Analysis of Global Security estimated the economic impact at up to $2 trillion, not including the cost of the wars in Afghanistan and Iraq.[57] Osama bin Laden himself made reference to the economic impact, estimating cost of the 9/11 attack at more than $1 trillion, remarking on U.S. budget deficits, and relating the economic impacts on the United States to those on Russia as they fought the mujahedeen.[58] With 10 ports

[56] Department of Health and Human Services, *Terrorism and Other*, 118.

[57] Institute for the Analysis of Global Security, "How much did the September 11 terrorist attack cost America?" Institute for the Analysis of Global Security. http://www.iags.org/costof911.html (accessed December 14, 2012).

[58] Keeney, "Identifying and Structuring," 1810.

accounting for almost 85% of all U.S. imports in 2009,[59] an attack on a major port facility, though likely to result in fewer deaths, would have a dramatic economic and psychological impact.

A suitcase bomb with a yield up to one-kiloton, though limited in damage when compared to an IND, would still have tremendous destructive power when compared to conventional explosives. As a comparison, the bomb used by Timothy McVeigh to destroy the Alfred P. Murrah Federal Building was estimated at 0.2 kilotons (see figure 4, below).[60] Because of its size and portability, it seems more likely that an attack with a suitcase bomb would take place in a population center to maximize its impact.

Figure 1: Damage done to Alfred P. Murrah Federal Building in Oklahoma City by 0.2 kiloton explosion. Source: wordpress.com

Estimates from the website Council on Foreign Relations (cfr.org) are that a one-kiloton blast in downtown Manhattan during the day would result in destruction of buildings over an 11 block area, 200,000 deaths, and another 200,000 injuries. They further estimate that

[59] U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *America's Container Ports: Linking Markets at Home and Abroad* (Washington, DC: Government Printing Office, 2011), 17.

[60] Homeland Security Newswire, "Secret bomb-proofing building design posted on the Web," Homeland Security Newswire, April 21, 2011. http://www.homelandsecuritynewswire.com/secret-bomb-proofing-building-design-posted-web (accessed Decmber 14, 2012)

50% of those exposed to fallout within three miles could die within weeks.[61] The destruction and casualties would likely dwarf the totals from the 9/11, with a commensurate increase in impact to the worldwide economy.

Considering again the DOD definition of a WMD (weapons capable of a high order of destruction or causing mass casualties), the case can be made that a radiological weapon is not really a type of WMD because its potential for causing destruction and mass casualty is a direct result of the amount of conventional explosive used in its construction, not its radiological content. Several publications even refer to an RDD as a weapon of mass *disruption,* citing its likelihood to create civil disorder, psychological and economic effects as the main impacts of detonation. Its inclusion in this discussion is appropriate, however, because of its specific inclusion in U.S. national strategies, the ability to move radiological material by known trafficking means, and its availability in unstable areas of the world. The destruction and deaths resulting from a radiological attack are more likely to result from the conventional explosive blast than the radiological material used in the device. Rather than destruction, an RDD is likely to have larger psychological and economic impacts. Though unlikely to destroy large areas, the spread of radiological material requires significant effort to quarantine and sanitize affected areas. In addition to cleanup costs, there would likely be significant emotional resistance to reutilization of the affected area even after it was decontaminated. If a critical public area was attacked (Wall Street, Washington DC, a sports stadium, or a transportation hub), the long-term effects could be magnified through abandonment of the property, requiring massive restructuring of public support sectors.

[61] Council on Foreign Relations, "Responding to Nuclear Attacks."

Past radiological incidents provide examples of the dangers associated with exposure to relatively small amounts of radiological material. In 1987 in Goiania, Brazil, two thieves broke into an abandoned medical clinic and stole the rotating head of a radiotherapy machine. Intending to sell the valuable parts for scrap, they dismantled it, in the process removing the cesium-137 from a protective canister which measured only 20 inches in diameter by 18 inches high. Within a day, both exhibited signs of radiation sickness and suffered from visible radiation burns. Over the next 15 days, the capsule containing the powdered cesium was broken open, with exposure to pellets the size of a grain of rice and the associated components of the housing causing the internal or external contamination of 249 persons, resulting in four deaths and a total contamination area of approximately one square kilometer.[62] In February 1997, 11 soldiers from the former Soviet republic of Georgia developed radiation burns resulting from repeated radiation exposure over several months. After an extensive investigation, the source was discovered to be a small, metallic cylinder of cesium-137 that was in the pocket of a jacket the soldiers had shared for guard duty. The radiation dosage to which the soldiers were exposed was 130,000 times greater than the average annual background radiation exposure, and 40 times higher than that of the victims exposed in Goiania. One soldier relayed that "I put my hands in water all day and all night and started to peel skin off my fingers. For five or six months I couldn't get out of bed. As soon as I did, I would start to bleed."[63]

[62] International Atomic Energy Agency, *The Radiological Accident in Goiania* (Vienna, Austria: International Atomic Energy Agency, 1988), 2.

[63] Diego Lluma, "Fomer Soviet Union: What the Russians Left Behind,"*The Bulletin of the Atomic Scientists* 56, no.3, (May 1, 2000): 14.

Regardless of the type of attack, the biggest long-term impacts are likely to be psychological and economic. Prior to and since 9/11, though there have been attempts, there have been no successful mass casualty attacks in the United States perpetrated by a foreign organization. The ability of U.S. law enforcement to detect and prevent attacks provides a societal peace of mind that allows citizens of the United States to live their lives with minimal concern for their personal safety. Additionally, while the 9/11 attacks imposed a tremendous cost on the country in lost revenues, clean-up, rebuilding, and increased security, the economic engine of the country was not critically damaged. As much as the 9/11 attacks changed the security landscape of the United States, the effects of a nuclear or radiological attack have the potential to be orders of magnitude greater.

Summary

The devastating physical and psychological effects of a nuclear or radiological attack are well-documented. The long-term and far-reaching political, economic, military, and health consequences would forever alter world dynamics. The proliferation of nuclear weapons and nuclear weapon technology, the availability of radiological material, and the desire of Al Qaeda to obtain such a capability makes preventing their acquisition and transportation of material or weapons critical to defending the United States from an attack.

CHAPTER 2: DEFINING THE ILLICIT TRAFFICKING PROBLEM

The challenge of illicit trafficking in connection with terrorism is one of conveyance means and methods as they relate to the size and type of device to be moved and the intended target. Adequately understanding the threat requires an examination of why organizations are involved in trafficking, how much they traffic, and the ways and means of conducting trafficking. A central question exists: assuming that a terrorist organization acquires a WMD, do the means exist to get it into the United States and to a desired target area?

Organizational Motivation

Foreign Terrorist Organizations, as described by U.S. law, are politically motivated organizations that use violence to accomplish their political goals.[1] FTOs were at one time predominantly hierarchical, supported by a centralized organization, and often identifiable with a state-borne conflict (Irish Republican Army, Revolutionary Armed Forces of Colombia, Sendero Luminoso).[2] As terrorist organizations like Al Qaeda have grown and become more internationally focused, they have also decentralized into cells connected more by shared ideas and ideology than hierarchical leadership structure.[3] Though trading upon the name and reputation of the larger organization, these cells often have no formal communication with them or support from

[1] *Designation of Foreign Terrorist Organizations*, US Code, Title 8, Section 1182.

[2] Steven Hutchinson and Pat O'Malley, "A Crime–Terror Nexus? Thinking on Some of the Links between Terrorism and Criminality," *Studies in Conflict & Terrorism*, 30: no. 12, 1098.

[3] Hutchinson, "A Crime-Terror Nexus," 1098.

them, their only connection being the ideology and inspiration of the central leadership.[4] The cells may form and dissolve as they are needed to accomplish specific tasks or because of shared familial or goal oriented bonds. They do not generally represent enduring branches of the organization and, therefore, do not require enduring mechanisms for support.[5] Though operating through networked proxies to conduct attacks, Al Qaeda retains a central organization that plays a vital role in determining its direction. This central organization, as an enduring entity, requires a reliable source of income to provide for its continued operation.[6] The need to secure financial resources drives terrorist cells and their central organizations to engage in criminal activity. While that activity often resembles the activity of criminal networks, the criminal acts remain a means to achieve the organization's political ends. The key characteristic of the FTO is its focus on the use of violence to bring about political change, often with the ultimate goal of removing sitting governments and instituting its own version of governance.[7] Their involvement in criminal activity to secure resources does not overshadow their political aims.

International trafficking organizations (TCOs and DTOs), meanwhile, engage in criminal activities as their primary *modus operandi*. With economic gain as their end

[4] The 9/11 attacks were planned and supported by Al Qaeda leadership. The plot to attack Ft Dix in New Jersey in 2006 was planned by a cell inspired by Osama bin Laden and the Al Qaeda ideology, but with no known connection to the organization. For more information, see Fox News, "5 Men Found guilty of Plotting to Kill Fort Dix Soldiers," foxnews.com, http://www.foxnews.com/story/0,2933,470900,00.html (accessed November 23, 2012)

[5] Hutchinson, "A Crime-Terror Nexus?" pg. 1100.

[6] Ibid., 1101.

[7] Ibid., 1103.

state, criminal activity is a core competency, essential for the achievement of those ends.[8] For DTOs, this may include production, trafficking, and distribution of drugs. TCOs run a wider variety of operations, including counterfeit products, weapons, and financial scams. In addition, in order to protect their illicit business dealings, TCOs engage in legitimate business enterprises to provide a legitimate entry point into the banking system for illicit gains, and to develop production and distribution networks.[9] In order to realize their goal of profit from their crimes, trafficking organizations often use violence as a means of influencing local populations, politicians, or governments to alter actions prejudicial to their business.[10] Rarely, however, is the violence designed to usurp the government for political purposes. On the contrary, criminal organizations often rely on weak governments and corrupt government officials in order to protect their enterprise.[11] A wholesale collapse of the government and accompanying civic disorder is not conducive to their business. When resorting to violence, it is often targeted to send a message or make an example of someone who obstructed the criminal activity.[12] Large scale violence that induces panic and political upheaval, though a recent problem with Mexican cartels,[13] has not traditionally been a hallmark of organized crime as it tends to invite government scrutiny and greater law enforcement or military attention.

[8] Louise Shelley and John Picarelli, "Methods Not Motives: Implications of the Convergence of International Organized Crime and Terrorism," *Police Practice and Research*, 3, no. 4 (2002): 312.

[9] Ibid., 315-316.

[10] Hutchinson, "A Crime-Terror Nexus?" 1100.

[11] Shelley, "Methods Not Motives," 315.

[12] Ibid., 309.

[13] Ibid., 309.

How Much is Being Trafficked

Trafficking organizations routinely smuggle drugs, bulk cash, and humans[14] into the United States. The movement of drugs is well-documented and provides an accessible means to draw comparisons and conclusions about the likely means of trafficking in WMD. When using illegal means of trafficking, ITOs use land, air and sea avenues of approach to get their products into the United States. By the nature of their movement, the amount of goods moved illicitly is an estimate based on statistical analysis of detections and interdictions, comparison to past rates, and analysis of production capabilities in the source countries.

The potential capacity of illicit trafficking of all types is significant. The 2012 National Drug Control Strategy Data Supplement estimates that from 1996 to 2002, the most recent years for which data were available, a per year average of 561 MT of cocaine was available for export from drug producing countries, 343 MT of cocaine were shipped to the United States, and 273 MT were available for consumption.[15] Immigration and Customs Enforcement reported that in 2010, U.S. Customs and Border Protection (CBP) arrested more than 200 individuals and seized more than $101 million in bulk cash[16]

[14] As used in this paper, the term "human smuggling" includes international human trafficking. Under the premise of human smuggling, the smuggler and the person being smuggled have an agreement and the act of smuggling is done with willful cooperation. Human trafficking is generally considered to be conducted for the purposes of exploiting the individual being smuggled and done without their consent or under false pretenses. In either case the means of transit across a border is designed to evade law enforcement protocols for detection.

[15] U.S. President, *National Drug Control Strategy: Data Supplement 2012* (Washington, DC: Government Printing Office, April 2012), 72.

[16] Immigration and Customs Enforcement, "FAQ: Bulk Cash Smuggling," Immigration and Customs Enforcement, http://www.ice.gov/bulk-cash-smuggling-center/faq/ (accessed November 21, 2012). Bulk Cash Smuggling is a reporting offense under the Bank Secrecy Act, and is part of the United States Code (USC). The code stipulates: Whoever, with the intent to evade a currency reporting requirement, knowingly conceals more than $10,000 in currency or other monetary instruments on the person of such individual or in any conveyance, article of luggage, merchandise, or other container, and transports or transfers or attempts to transport or transfer such currency or monetary instruments from a

smuggling incidents, with another $330 million in bulk cash smuggling under investigation.[17] For human smuggling, the Pew Hispanic Center estimates that 850,000 illegal immigrants entered the United States each year in the early 2000s. Though declining since then, they estimate that from 2007 – 2009, there were still an estimated 300,000 illegal immigrants smuggled into the United States each year.[18]

Avenues of Approach

Given the assumption that FTOs are targeting the United States for an attack with WMD, where should the United States focus its resources? As the third largest country in the world by land mass and population, access into the country via legal and illegal crossings presents a key area of vulnerability. In addition to subversion of law enforcement efforts at border ports of entry (POE),[19] the land borders present opportunities for smuggling between POEs in essentially unmonitored areas, while the extensive coastline presents opportunities for maritime smuggling to uninhabited stretches of coast. Monitoring these entryways requires tremendous resources in the form of money, equipment, and personnel to facilitate licit shipments and arrivals at POEs, and in an effort to stop illicit trafficking at and between POEs.

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place within the United States to a place outside of the United States, or from a place outside the United States to a place within the United States, shall be guilty of a currency smuggling offense.

[17] Immigration and Customs Enforcement, "FAQ: Bulk Cash Smuggling."

[18] Jeffrey Passel and D'Vera Cohn, *U.S. Unauthorized Immigration Flows Are Down Sharply Since Mid-Decade* (Washington, DC: Pew Hispanic Center, September 2010), iii, http://www.pewhispanic.org/files/reports/126.pdf (accessed November 21, 2012).

[19] Customs and Border Protection has specific requirements for designating a Port of Entry, mainly focused on volume of traffic, goods, and personnel at a port. U.S. Customs and Border Protection, "Ports of Entry and User Fee Airports," U.S. Customs and Border Protection, http://www.cbp.gov/xp/cgov/trade/trade_outreach/ports.xml (accessed January 31, 2013).

The United States shares international land borders with Mexico and Canada. The Continental U.S. (CONUS) border with Canada, the longest uncontested land border in the world, is almost 4,000 miles. The southern border with Mexico is approximately 1,930 miles.[20] CBP supports 198 POEs at which a vehicle can directly travel from one country to the other (146 on the U.S.-Canada border; 52 on the U.S.-Mexico border).[21] CBP officers are assigned to these crossings and have the capacity to inspect vehicles, check documentation, and apprehend illicit persons and goods.

Bounded by the Atlantic Ocean to the east, the Pacific Ocean to the West, and the Gulf of Mexico to the south, the CONUS coastline is approximately 6,000 miles when measured from a straight maritime baseline. However, considering the variables of inlets, coves, bays, and tides, estimates of the length of the coastline are as high as 29,000 miles.[22] To regulate incoming and outgoing international maritime trade and travel, there are 181 maritime POEs.[23] Handling cruise ships, salvage vessels, cargo and tanker vessels, CBP and U.S. Coast Guard (USCG) personnel man these ports to provide law

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[20] Congressional Research Service, *U.S. International Borders: Brief Facts*, Janice Cheryl Beaver, RS21729 (Washington, DC: Government Printing Office, November 9, 2006), http://www.fas.org/sgp/crs/misc/RS21729.pdf (accessed February 6, 2013).

[21] David Davidson, Kathlleen Mintz, and Bryant Hammond, "Atlas of the Land Entry Ports on the Canada – U.S. Border," *Border Policy Brief*, 5, no 1 (Winter 2010). Border Policy Research Institute, Western Washington University, http://www.wwu.edu/bpri/files/2010_Winter_Border_Brief.pdf (Accessed January 31, 2013). Also, Austin Rose and David Davidson, "Atlas of the Land Entry Ports on the U.S.-Mexico Border," *Border Policy Brief*, 5, no 4 (Fall 2010, Border Policy Research Institute, Western Washington University, www.wwu.edu/bpri/files/2010_Fall_Border_Brief.pdf (accessed January 31, 2013).

[22] Congressional Research Service. *U.S. International Borders*. The length of a coastline varies based on the scale of nautical chart utilized and convention followed to determine maritime baseline. The CRS report estimate is based on a general outline of the sea coast that does not consider the finer variations in coastline attributable to inlets, bays, coves, and tides. Estimates that consider these variations can be as high as 29,000 miles, while the NOAA estimate for coastal zone management is more than 88,000 miles.

[23] U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, U.S. Department of Commerce, Census Bureau. "Table 11-3: Number of Water Ports and Facilities," *North American Transportation Statistics Database, Section 11, Transportation Infrastructure*, http://nats.sct.gob.mx/11-3_en.html (accessed November 17, 2012).

enforcement and trafficking prevention efforts. In addition to monitoring the coastlines and POEs, CIT efforts focusing on the maritime transit zone must include an additional 3.1 million square miles of territory, an area that is more than twice the land mass of the continental United States.

The Alaska-Canada border, Alaska's extensive coastline, and the Hawaiian Islands represent additional areas of vulnerability to protect from illicit trafficking. Due to the tyranny of distance, none are common entries for trafficking organizations moving drugs from Central and South America, nor do their ports serve as primary POEs for large amounts of containerized cargo. For licit cargo, Anchorage, Alaska, was the United States' eighth busiest international air freight gateway for imports by value in 2003. The sea port in Anchorage is primarily an exporting hub, with only $129 M in imported goods arriving in 2003. The Port of Honolulu is primarily an import location, ranked 102nd in value of trade at $1.2B. Neither Honolulu nor Anchorage serves as a routine transshipment point for cargo intended for CONUS. Honolulu handled less than two-tenths of a percent of the $1.3 trillion of imports to the continental United States in 2003.[24] Considering the illicit entry of cargo, Alaska's almost 1,500 mile land border with Canada, and both states' extensive coastlines are vulnerable. However, assuming successful entry into Alaska, any overland conveyance would still be subject to the inspection process employed at the U.S.-Canada border. Shipments from Hawaii encounter the same CBP and USCG customs inspections. While perhaps not a simple avenue to introduce a WMD into CONUS, the remote geography and vulnerability to illegal entry in both Alaska and Hawaii present a target for a terrorist organization to

[24] U.S. Department of Transportation, Bureau of Transportation Statistics, *America's Freight Transportation Gateways: Connecting Our Nation to Places and Markets Abroad* (Washington, DC: Government Printing Office, 2003), 58, 67-68.

conduct an attack. The financial and psychological effects of such an attack would be significant, even if the impacts from death and physical destruction were more limited than an attack on a major port or population center in CONUS.

At designated ports of entry, CBP and USCG provide law enforcement and inspection of personnel, vehicles and cargo entering the United States. With more than 104 million vehicles and 264 million people crossing in to the United States each year along the Mexican and Canadian borders,[25] and more than 1.2 billion metric tons of international cargo arriving at U.S. seaports,[26] the challenges of securing the licit entry of cargo and personnel is daunting and necessitates tremendous allocation of resources. Challenging as it may be, procedures exist within physical and policy frameworks designed to facilitate the flow of licit commerce and persons. The larger challenge to border security lies in securing the spaces between POEs. With a total of only 379 POEs spread over a roughly 12,000 mile CONUS land and sea border, the areas between POEs are enormous. In 2006 and 2007, the Government Accountability Office conducted an investigation of security vulnerabilities of unmanned and unmonitored border locations along the Mexican and Canadian borders. The investigators identified seven locations from publicly available records that appeared to be vulnerable to illegal crossing. In six of seven locations, they were able to cross the border carrying simulated contraband or conduct significant surveillance activities in the vicinity of the border without challenge

[25] U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, U.S. Department of Commerce, Census Bureau. "Table 12-3: Border Crossings, U.S.-Canada and U.S. Mexico," *North American Transportation Statistics Database, Section 12, Transportation Infrastructure*, http://nats.sct.gob.mx/12-3_en.html (accessed November 17, 2012).

[26] U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, U.S. Department of Commerce, Census Bureau. "Table 11-4c: Top 20 United States Water Ports by Tonnage (Domestic and International) – 2010," *North American Transportation Statistics Database, Section 11, Transportation Infrastructure*, http://nats.sct.gob.mx/11-4c_en.html (accessed November 17, 2012).

from law enforcement. Additionally, at one location on the Mexican border, the investigators observed evidence of frequent crossings of the Rio Grande, with dirt boat ramps evident on both the United States and Mexican sides of the border.[27] While limited in scope, this investigation highlighted the challenges faced by law enforcement with respect to manpower resources and technology in the effort to secure the border against illegal crossings.

Legal Means to Ship Illicit Goods

As trafficking of illicit goods and persons takes many forms, the complex challenges facing the counter-trafficking effort defy simple explanation and solution. As an effort to understand the potential for WMD or terrorists to be moved into the United States by established trafficking means, a discussion of illicit trafficking needs to address the sheer volume of licit and illicit cargo that arrives in the United States. By framing the quantity of goods moved across the U.S. borders, the various means of conducting that transport can be assessed for their suitability for transporting WMD and terrorists.

As measured by Gross Domestic Product, the United States is the largest economy in the world, reliant upon international shipment of imports and exports. Goods enter the country legally using all means of transportation through established POEs: sea, land (rail and vehicle); and air. At U.S. seaports, more than 16 million[28] imported

[27] U.S. Congress, Senate, Committee on Finance, *Border Security: Security Vulnerabilities at Unmanned and Unmonitored U.S. Border Locations*, GAO-07-884T (Washington, DC: Government Printing Office), 2007, www.gao.gov/assets/120/117888.pdf (accessed November 17, 2102). According to GAO, in unmanned areas CBP relies on surveillance cameras, aerial drones, and other technology to monitor for illegal activity. In unmonitored areas, CBP relies on alerts from citizens or other sources of information to protect the border.

[28] U.S. Department of Transportation, Maritime Administration, "U.S. Waterborne Foreign Container Trade By U.S. Custom Ports, import (TEUs)," found under Maritime Statistics, Trade Statistics, U.S. Department of Transportation,

Twenty-Foot Equivalent Unit (TEU)[29] intermodal shipping containers bringing more than 1.2 billion metric tons[30] (MT)[31] of cargo are off-loaded each year. Imports by road and rail account for another 11 million loads of freight.[32] Comparatively, a very small amount of international cargo is transported by air, with aviation cargo accounting for only 25 million MT worldwide in 2010.[33] In 2004, international air cargo handled in the United States was only 9.5 million MT.[34] The products transported by TEU run the spectrum of consumer and industrial goods consumed by the U.S. population and industry, to include chemical, biological and radiological implements, instruments, and equipment with legitimate business and medical uses.

The 27 million separate cargo containers and shipments, spread across 379 POEs, represent 27 million opportunities to move illicit items into the United States, disguised within licit cargo, masked by legal and established commercial shipping means. Ensuring the security of this cargo is a primary mission of CBP, the USCG, and numerous other law enforcement and regulatory agencies. TCOs, by nature of their incorporation of

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http://www.marad.dot.gov/library_landing_page/data_and_statistics/Data_and_Statistics.htm (accessed February 4, 2013).

[29] The Twenty-Foot Equivalent Unit (TEU) is the standard for cargo containers used for international shipping. While variations exist, the most common dimensions for TEUs (in feet, length x width x height) are: 20 x 8 x 8.5 for 1,360 cu ft and 48,000 lbs of cargo. Wikipedia: The Free Encyclopedia, "Twenty Foot Equivalent Unit," Wikipedia, http://en.wikipedia.org/wiki/Twenty-foot_equivalent_unit (accessed November 12, 2012).

[30] U.S. Department of Transportation, "Table 11-4c."

[31] 1 metric ton = 1,000 kg = 2,204 lbs

[32] U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, U.S. Department of Commerce, Census Bureau, "Table 7-1: International Merchandise Trade by Mode," *North American Transportation Statistics Database, Section 7, International Merchandise Trade*, http://nats.sct.gob.mx/7-1_en.html (accessed November 17, 2012).

[33] U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Freight Transport: Global Highlights, 2010* (Washington, DC: 2010).

[34] U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *The Nation's Freight* (Washington, DC: 2002), http://www.bts.gov/publications/freight_in_america/html/nations_freight.html (accessed January 31, 2013).

legitimate businesses to shield corrupt dealings, often have access to these legitimate shipping means and utilize them to move their illicit products. (Chapter 3 contains further discussion about security concerns and techniques to address them.)

Illegal Means to Ship Illicit Goods

The foundation of illicit trafficking lay upon the financial windfall of a successful trafficking scheme. The United Nations Office on Drugs and Crime (UNODC) estimates that global illicit trafficking was valued at $1.3 trillion in 2011.[35] With that backdrop, the fight against trafficking is a global problem with tremendous financial resources and incentives. As a result, while there is a temptation to measure the success of counter-trafficking efforts by decreases in seizures, the reality is that when interdiction efforts increase and impact the profitability of trafficking organizations, they shift methods to continue to deliver their goods.

While all forms of trafficking have the potential to be exploited by a terrorist seeking entry to the United States, focusing on the drug trade and attempts to breach the border of the United States provides a basis for understanding the evolution of trafficking methods as well as DTO adaptation to detection and interdiction efforts. As economically driven organizations, DTOs respond to interdiction efforts that impact their business by altering their trafficking methods in order to maintain the flow of revenue producing products. During the 1980s and early 1990s, the Colombian Medellin Cartel was the predominant drug trafficking organization of concern. Their primary trafficking methods utilized the Caribbean approaches to the U.S. mainland (particularly South Florida) and

[35] United Nations Office on Drugs and Crime, *Action Against Transnational Organized Crime*, 10.

consisted of low-flying private aircraft and maritime delivery via private vessels.[36] To bring more resources to counter-trafficking efforts, the 1989 Defense Authorization Act designated the Department of Defense as the lead federal agency for Detection and Monitoring of aerial and maritime transit of illegal drugs.[37] This increase in interdiction assets and the increased use of radar led to a shift in drug trafficking methods such that in the 1990s, "70 to 80 percent of the cocaine smuggled out of Colombia entered the United States through Mexico while only 20 to 30 percent continued to come in via the Caribbean."[38] This shift in conveyance is representative of the influence that detection and interdiction methods can have on trafficking.

While successes associated with increases in Detection and Monitoring and regional efforts to curtail trafficking have had an effect measurable in tons of drugs, numbers of weapons, and bulk cash seized, trafficking remains a financially lucrative trade. As a result of detection and interdiction efforts, trafficking organizations have diversified their trafficking methods and continue to seek new technologies to aid their efforts. According to RADM Charles D. Michel, Director, Joint Interagency Task Force-South (JIATF-S),[39] more than 80 percent of cocaine leaving source zone countries transits initially via maritime means, with the remaining 20 percent via air. Though aimed

[36] Kimberly Corcoran, *DOD Involvement in the Counterdrug Effort: Contributions and Limitations* (Montgomery, Al: Air Command and Staff College, March 1997), 27, https://www.hsdl.org/?view&did=2599 (accessed November 18, 2012).

[37] Evan Munsing and Christopher Lamb, *Joint Interagency Task Force-South: The Best Known, Least Understood Interagency Success*, Strategic Perspectives No. 5 (Washington DC: Institute for National Strategic Studies, NDU Press, June 2011), 10.

[38] Bruce Bagley, *Drug Trafficking, Political Violence, and U.S. Policy in Colombia in the 1990s*, (Coral Gables, Fl: Univeristy of Miami School of International Studies, January 2001): 4-5, http://investigadores.cide.edu/bruce_bagley/drugs%20and%20violence%20final3.pdf (accessed October 22, 2012).

[39] The Joint Interagency Task Force-South (JIATF-S) is a Joint Task Force under command of United States Southern Command. JIATF-S conducts interagency and international Detection & Monitoring operations, and facilitates the interdiction of illicit trafficking.

at reducing the flow of illegal drugs into United States, detection and interdiction efforts have resulted primarily in ITOs diversifying their trafficking methods.

As air and maritime trafficking through the Caribbean was disrupted in the late 1980s and early 1990s preventing direct entry of drugs from source countries in South America (Colombia, Bolivia, Peru), traffickers turned more to overland routes through Central America and Mexico to position drugs for transfer into the United States, with up to 90 percent of the documented cocaine supply estimated to come via this corridor in recent years.[40] This transition in trafficking routes gave rise to the Mexican Cartels focused on delivery and distribution within the United States. The Mexican Cartels, faced with stiffening resistance along the U.S. border, continue to challenge enforcement and interdiction efforts, turning to maritime means, tunnels, and air delivery. In addition to continuing reliance on 'go-fasts' to move drugs to the transit zone, source zone countries have also reemerged as possible direct trafficking threats with the development of self-propelled semi-submersible vessels and fully submersible vessels.

As recently as 2011, Immigration and Customs Enforcement (ICE) identified more than 180 smuggling events associated with Mexican "pangas," open hulled fishing boats normally found on the internal waterways of Mexico (see Figure 2). Through July 2012, there were a reported 113 events. These pangas, equipped with up to 4 outboard motors, operate in the Pacific Ocean and have been discovered in San Simeon, California, 300 miles north of the Mexican border. Carrying loads of as much as five tons of drugs, the low slung freeboard is difficult to detect. The pangas either transload their shipments

[40] House Committee on Homeland Security, Subcommittee on Border and Maritime Security. *Written Statement of Rear Admiral Charles Michel, Director, Joint Interagency Task Force South, Hearing on Border Security Threats to the Homeland: DHS's Response to Innovative Tactics and Techniques,* 112th Cong., 2nd sess., 2012.

to pleasure boats or commercial fishing boats, or transit directly to secluded coastal beaches with access to roads. Designed for internal waters, however, the pangas are unstable and dangerous on the open ocean, especially with poorly trained crews and when overloaded. With enforcement efforts increased, they have been known to go as far as 100 miles offshore in order to avoid detection, further increasing the risk of loss of the conveyance, crew, and cargo.[41,42]

Figure 2: Panga boat captured near Huntington Beach, in Southern California (photo by Borderland Beat, http://www.borderlandbeat.com/2012/06/california-faces-threat-at-sea-from.html)

Increased detection and interdiction efforts significantly decreased the occurrence of 'go-fast' events, glamorized in the 1980s by the television show "Miami Vice." However, the method did not die off as a means of moving illicit cargo. While go-fast events are no longer a primary means of direct shipment of drugs to the United States as

[41] House Committee on Homeland Security, Subcommittee on Border and Maritime Security. *Testimony of Donna Bucella, Assistant Commissioner, Office of Intelligence and Investigative Liaison, U.S. Customs and Border Protection, Department of Homeland Security,Hearing on Border Security Threats to the Homeland: DHS's Response to Innovative Tactics and Technique.*, 112th Cong., 2nd sess., 2012, 7.

[42] Chivis Martinez, "California Faces Threat at Sea From Chapo's Latest Drug Smuggling Technique," Borderland Beat Blog, entry posted June 4, 2012, http://www.borderlandbeat.com/2012/06/california-faces-threat-at-sea-from.html (accessed January 31, 2013)

they were in the 1980s and 1990s, DTOs still use go-fasts to move their products. Adapting to the environment, the current mechanism involves smaller loads, a greater number of boats, and a shift from the central Caribbean to the littorals of Central America. JIATF-S estimates that there were more than 560 go-fast trafficking events in 2011, with the capacity to move almost 500 MT of cocaine. Reflecting the success of interdicting events destined for the Florida Keys and U.S. southern coastal areas, ninety four percent of those go-fast events terminated in Guatemala, Honduras, or Mexico.[43]

While all of the preceding means of trafficking drugs present realistic threats of exploitation by FTOs, none would appear to equal the opportunity of the self-propelled, semi-submersible (SPSS) and fully submersible vessels (FSV). The SPSS is a low freeboard vessel with a crew of up to four, capable of carrying up to 10 MT of cocaine in a single trip (figure 3). With increasingly sophisticated exhaust masking and navigation capability, the SPSS continues to be difficult to detect and interdict. First detected in 2006, JIATF-S has since documented 214 SPSS events and estimates SPSS events to be capable of transporting up to 330 MT of cargo per year.[44] The FSV has a range of up to 6,800 (enough to travel from the west coast of Colombia to Los Angeles, or the north coast of Colombia to Galveston, Tx), can travel fully submerged, and carry up to 10 MT of cargo. The first FSV seizure occurred in Ecuador in 2010. Since then, authorities seized two more vessels in Colombia (figure 4). Each of the seized vessels had a cargo capacity of greater than seven tons, with sophisticated power plants that allow them to travel submerged during the day, then surface at night to recharge their electric

[43] House Committee, *Statement of Rear Admiral Charles Michel*.

[44] Ibid.

batteries.[45] The cost to build a SPSS or FSV is estimated at up to $2 million; however, based on a single successful trafficking event, the proceeds from such a vessel are estimated to be as much as $100 million.[46]

Figure 3: A self-propelled semi-submersible craft loaded with 3.5 tons of cocaine seized in 2006 in the Pacific Ocean, 90 miles southwest of Costa Rica. Photo by U.S. Coast Guard

Figure 4: A fiberglass, fully submersible vessel seized in the Colombian jungle. AP Photo.

Continuing to demonstrate their determination, trafficking organizations have also developed tunnels for use, primarily along the Mexico-California border. The tunnels thus far discovered have varied from primitive tunnels required to be crawled through, to

[45] Ibid.

[46] Ibid.

a sophisticated tunnel that was ¼ mile long, with lighting, ventilation and a rail transport system. Two major tunnel operations disrupted in November 2011 resulted in the seizure of 52 tons of marijuana. As of March 2012, CBP and their partners discovered and disrupted 154 tunnels along the southwest border.[47]

Summary

Conducting a WMD attack on the United States will require willing actors with the means and motives to move illicit goods, coupled with an ability to detect and exploit vulnerabilities in U.S. defenses. International Trafficking Organizations have demonstrated the ability to transport a wide range and large quantity of illicit products into the United States while Foreign Terrorist Organizations, specifically the Al Qaeda Network, have a demonstrated desire to attack the United States. Both the criminal networks and the terrorist organizations have sufficient motivation to continue to pursue illicit entry into the United States, ensuring that the mechanisms to transport the illicit goods will remain threats. The geographic breadth of the United States and necessity to facilitate licit global trade results in significant gaps and seams at the U.S. borders, complicating efforts to prevent illicit trafficking. The combination of these factors presents an exploitable vulnerability of which the AQN could take advantage if they are able to obtain a weapon.

[47] House Committee, *Testimony of Donna Bucella*.

CHAPTER 3: COUNTER ILLICIT TRAFFICKING EFFORTS

With mature trafficking organizations, potential availability of WMD, and AQN desire for WMD established, the challenge facing the United States becomes one of preventing any such weapons or materials from getting into the United States. To counter trafficking, the United States has developed and invested in resources to defend against both the illicit transit of goods via criminal routes and the intermingling of illicit goods within licit shipments. Methods include maritime detection and monitoring, international initiatives for illicit shipment interdiction, international agreements for container security, domestic programs for container inspection, and international nuclear non-proliferation and nuclear security agreements.

Detection and Monitoring

The 1989 Defense Authorization Act designated the Department of Defense (DoD) as the lead agency for aerial and maritime Detection and Monitoring (D&M). [1]

> Until DoD was mandated the lead agency for drug surveillance, detection and monitoring of drug trafficking was sporadic, as the civilian agencies that had been charged previously with the task lacked the aircraft and ships needed for continuous surveillance. The Pentagon, however, was able to supply the resources necessary to conduct near continuous surveillance of the primary trafficking routes.[2]

DoD assets employed in D&M include tethered radar aerostats, ground-based radars, ships, and aircraft.[3] Because DoD is restricted from performing law enforcement

[1] Peter Zirnite, *Reluctant Recruits: The U.S. Military and the War on Drugs* (Washington, DC: Washington Office on Latin America, August 1997), under Executive Summary, http://www.tni.org/sites/www.tni.org/files/download/Reluctant%20recruits%20report_0.pdf (accessed January 21, 2013).

[2] Ibid., under VII. Detection and Monitoring.

[3] Ibid., under VII. Detection and Monitoring.

activities,[4] CBP, the U.S. Coast Guard, other U.S. law enforcement agencies, and foreign law enforcement entities share responsibility for interdiction of suspected drug smuggling efforts.[5] In the years since its designation, DoD asset commitment to D&M has varied with changing political emphasis and budgetary commitments to the war on drugs. As a drug control strategy, increasing emphasis on detection and monitoring has drawn scrutiny over the years, questioning its effectiveness at reducing the flow of drugs. A 1988 RAND Corporation study on the effects of increased military participation in drug interdiction concluded that the effort would likely have only a modest effect on the availability of drugs in the United States.[6] A 1997 report by Peter Zirnite at the Washington Office on Latin America points to the tremendous monetary expenditures and focus on performance measures as indicators of effectiveness, noting that the tactical successes of interdiction do not equate to strategic victory in the war on drugs.[7] The 1988 RAND study, in addition to identifying the likelihood of a negligible impact on drug consumption, also conducted analysis of the likely response of traffickers to increased interdiction efforts. The study concluded that when faced with increased detection and interdiction efforts, smugglers would adapt by varying transportation routes, methods, and procedures.[8] These conclusions, offered the year prior to the DoD being designated as the lead D&M agency, have been borne out in the ensuing years. Efforts in the late

[4] *Military Support for Civilian Law Enforcement Agencies, Restriction on Direct Participation by Military Personnel*, US Code, Title 10, Subtitle A, Part I, Chapter 18, Section 375.

[5] U.S. General Accounting Office, *Report to the Honorable Jeff Sessions, U.S. Senate: Drug Control: Difficulties in Measuring Costs and Results of Transit Zone Interdiction Effort*,GAO-02-13 (Washington DC: Government Printing Office, January 2002), 7.

[6] Peter Reuter, Gordon Crawford, and Jonathan Cave, *Sealing the Borders: The Effects of Increased Military Participation in Drug Interdiction*, Report for the Office of the Under Secretary of Defense for Policy (Santa Monica, CA: RAND, 1988), xi.

[7] Zirnite, "Reluctant Recruits," under Executive Summary.

[8] Reuter, "Sealing the Borders," viii.

1980's and early 1990's induced a shift from air and maritime conveyance to overland routes.[9] Continued focus on transit zone detection and monitoring since has seen the rise of semi-submersibles, fully submersibles, long-distance Pacific Ocean transit routes, increased use of the Central American littorals, and overland and underground routes from Mexico as detailed in Chapter 2. While impacts on the overall drug trade are subject to debate, the changes in methods and modes of conveyance demonstrate that Detection and Monitoring in the transit zone have increased the pressure on illicit traffickers seeking to enter the United States undetected, resulting in shifting trafficking patterns and techniques.

Container Security

Following the terrorist attacks on September 11, 2001, CBP launched the Container Security Initiative (CSI). The initiative is designed to reduce the threat of a terrorist organization using a maritime shipping container to conduct an attack on the United States. The core elements of the CSI include: identifying high risk containers; prescreening and evaluating containers early in the supply chain, generally prior to embarkation at the port of departure; and using advanced and non-intrusive technology to screen containers. Focusing first on foreign ports shipping the highest volume of containers to the United States, CBP teams working with host nation personnel currently operate in 58 ports worldwide. In 2010, the teams reviewed more than 10 million maritime shipments. While not all of these shipments were physically inspected, the

[9] Corcoran, "DOD Involvement," 27.

prescreening process and inspections represented more than 80% of all maritime cargo imported into the United States.[10]

Requiring cargo manifests in advance, CBP teams collaborate with host nation partners to use intelligence sources and advanced targeting information to identify high risk containers prior to their arrival in the port facility. Once identified, these containers are screened prior to being loaded on a ship bound for the United States. Key to the success of the CSI is the use of technology to scan suspect containers, which includes use of x-ray and gamma ray machines, as well as radiation detection devices.[11] These non-intrusive devices scan for illicit cargo while not impeding the flow of trade. The World Customs Organization, the European Union, and the G8 have all expressed support for the CSI and have assisted in its implementation worldwide.[12]

A related program initiated in November 2001 is the Customs-Trade Partnership Against Terrorism (C-TPAT) program. The C-TPAT is a supply chain security program administered by CBP that enrolls companies with business importing products into the United States with a goal of extending border security to the point of origin for imports. Enrollment in the program requires companies to work with CBP to implement specific supply chain security measures, identify security gaps, and validate a secure international supply chain. In return for these investments in security and cooperation, companies and their cargo are considered lower risk, resulting in fewer inspections and delays in cargo transport at U.S. POEs. At inception, there were seven major importers signed on as

[10] U.S. Customs and Border Protection, *Container Security Initiative in Summary* (Washington, DC: Government Printing Office, May 2011), http://www.cbp.gov/linkhandler/cgov/trade/cargo_security/csi/csi_brochure_2011.ctt/csi_brochure_2011.pdf (accessed December 5, 2012).

[11] Ibid.

[12] Ibid.

members. As of June 2011, there were more than 10,000 companies accounting for more than 50% by value of trade entering the United States.[13]

Southwest Border

Considering the flow of illegal drugs and immigrants through the Caribbean, Central America, and Mexico, security of the southwest border is among the highest priorities of multiple federal agencies. Noting that "the routes and methods of existing smuggling organizations could potentially be utilized to transport terrorists or weapons of mass destruction across the border," the 2011 National Southwest Border Counternarcotics Strategy identifies that enhanced detection and interdiction of narcotics "strengthens our all-threats approach to border security."[14] Strategies employed in this effort include partnership with Mexico, and increased detection and interdiction resources at and between POEs.

With a goal "to fight organized crime and associated violence while furthering respect for human rights and the rule of law,"[15] the Merida Initiative has provided more than $1.6 billion in aid to the Mexican government since it began in 2008.[16] While working on broader issues of security and citizen safety throughout Mexico, the program has recognized the importance of counter trafficking, and in 2010, elevated "building a

[13] U.S. Customs and Border Protection. "C-TPAT: Program Overview," U.S. Department of Homeland Security, http://www.cbp.gov/linkhandler/cgov/trade/cargo_security/ctpat/ctpat_program_information/what_is_ctpat/ctpat_overview.ctt/ctpat_overview.pdf (accessed February 3, 2013).

[14] U.S. President, *2011 National Southwest Border Counternarcotics Strategy* (Washington, DC: Government Printing Office, 2011), 17.

[15] U.S. Department of State, Bureau of Western Hemisphere Affairs, *The Merida Initiative: Expanding the U.S./Mexico Partnership* (Washington. DC: Government Printing Office, March 29, 2012), http://www.state.gov/p/wha/rls/fs/2012/187119.htm (accessed December 5, 2012).

[16] Ibid.

21st century border" [17] as one of its four pillars. Elements of the program that have focused specifically on trafficking and border security threats include delivery of law enforcement and military aircraft, and delivery of and training to use scanners, x-ray machines and other non-intrusive inspection capabilities at Mexican ports of entry.[18]

In Congressional testimony in June 2012, Donna Bucella, the CBP Assistant Commissioner for the Office of Intelligence and Investigation Liaison, testified on broad United States efforts underway to secure the border. CBP currently has more than 43,000 Border Patrol agents and officers, 270 aircraft, nine unmanned aerial systems and 300 patrol and interdiction boats on duty in the border area. In addition to employing behavioral observation techniques, fiber-optic scopes, and non-intrusive imaging systems, they have deployed eight rail imaging systems to scan 100% of commercial rail traffic to and from Mexico. Additional testing is ongoing on a radiography/radiation detection system. Their efforts resulted in 74% more currency, 41% more drugs, and 159% more weapons being seized along the southwest border in FY 2009 – 2011 than was seized in FY 2006-2008, on a typical day seizing 13,700 lbs of drugs and $350,000. The use of P-3 Maritime Patrol aircraft in FY 2011 alone resulted in the disruption or seizure of more than 148,000 pounds of cocaine valued at more than $11.1 billion.[19]

Acknowledging the challenge of border security between POEs, CBP uses advanced technology, including tripwires, acoustic sensors and air-based surveillance to provide monitoring for border violations. Leveraging federal, state, tribal and

[17] Congressional Research Service, *U.S.-Mexican Security Cooperation: The Merida Initiative and Beyond*, Clare Ribando Seelke and Kristin Finklea, R41349, (Washington, DC: Government Printing Office, August 2011), under Summary, http://fpc.state.gov/documents/organization/171385.pdf (accessed September 12, 2012).

[18] Department of State, *The Merida Initiative*.

[19] House Committee, *Testimony of Donna Bucella*, 8.

international agencies, CBP spearheaded establishment of the Alliance to Combat Transnational Threats (ACTT) in Arizona in 2009. Utilizing the skills of more than 60 agencies, the ACTT has led to seizure of more than 2.7 million pounds of marijuana, 8,400 pounds of cocaine, 3,000 pounds of methamphetamine, and 525 weapons, as well as more than 427,000 apprehensions between POEs.[20]

Operation Martillo

As another example of broad partner nation efforts to interdict illicit trafficking, United States Southern Command (USSOUTHCOM) initiated Operation Martillo in January 2012. Operation Martillo is a joint, combined, multinational, interagency effort led by JIATF-S. Involving 14 partner countries from Central and South America and Europe, the operation is designed to interdict trafficking in the littorals on both the east and west sides of the Central American isthmus.[21] RADM Michel estimates that as much as 80% of the drugs coming to the United States are trafficked via Central American maritime routes, with 35% making first landfall in Honduras.[22] For the operation, the U.S. military provides maritime and air assets to detect illicit trafficking vessels, cueing partner nation and U.S. law enforcement teams to conduct interdiction operations before the vessels deliver their cargo.[23]

Vitoria Rossi, in her post "US's Operation Martillo Seized Over $2Bn in Drugs" on *InSightCrime.org*, reported that as of September 2012, the operation had seized 105 tons of cocaine valued at more than $2 billion. In his June 2012 article "Guatemala:

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[20] Ibid., 11.

[21] United States Southern Command, "Operation Martillo," United States Southern Command, http://www.southcom.mil/newsroom/Pages/Operation-Martillo.aspx (accessed February 6, 2013).

[22] House Committee, *Statement of Rear Admiral Michel.*

[23] Southern Command, "Operation Martillo."

Operation Martillo targets narcotics on Pacific Coast," Raul Castillo reported for *Infosurhoy.com* that more than 70 vessels have been confiscated and 10 clandestine landing strips have been destroyed by the Guatemalan military. RADM Michel testified to Congress in June 2012 that partner nation military and law enforcement agencies have participated in more than 83% of the interdictions conducted during the operation. As evidence of the effects on trafficking, he also reported a 46 metric ton year-over-year decrease in the documented flow of cocaine through the Central American corridor.[24]

Proliferation Security Initiative

Announced by President George Bush in May 2003, the Proliferation Security Initiative (PSI) has grown from an initial 11 nations agreeing to its "Statement of Interdiction Principles"[25] to 100 as of July 2012.[26] As stated by President Bush when introduced, the goal of the initiative is "to keep the world's most destructive weapons away from our shores and out of the hands of our common enemies."[27] As opposed to additional international laws or treaties, the PSI is a mechanism to bring the party countries together in an effort to expand domestic laws and international cooperation on interdiction of air, land, and sea-based shipments of WMD, their delivery systems, and related material. Participation in the initiative requires only that a country commit to the interdiction principles; compliance with the principles is voluntary. With no formal

[24] House Committee, *Statement of Rear Admiral Michel.*

[25] Congressional Research Service, *Proliferation Security Initiative*, Mary Beth Nikitin, RL34327 (Washington, DC: Government Printing Office, June 2012),1.

[26] U.S. Department of State, "Proliferation Security Initiative," U.S. Department of State. http://www.state.gov/t/isn/c10390.htm (accessed December 5, 2012).

[27] George W Bush, "Remarks by the President to the People of Poland," (speech given at Wawel Royal Castle, Krakow, Poland, May 31, 2003), http://georgewbush-whitehouse.archives.gov/news/releases/2003/05/20030531-3.html (accessed December 5, 2012).

international body and no distinct lines of funding, the PSI relies on member countries to designate sufficiently high-level government representatives to attend international meetings and commit resources to participate in international exercises.[28] Led by the Operational Expert Group representing 21 member countries of the initiative, the PSI also conducts international exercises, holds meetings to discuss proliferation concerns, and has developed a concept for sharing "Critical Capabilities and Concepts" between member countries.

In practice, PSI encourages participating countries to make agreements with each other to enable timely interdiction if intelligence indicates a smuggling event is occurring. Thus far, the United States has established bilateral ship-boarding agreements with 11 member countries, permitting the countries to board each other's commercial vessels in international waters to inspect, but not necessarily seize, onboard cargo. Among those are the top five flag of convenience[29] countries suspected to be responsible for more than 70% of trafficking in destabilizing military equipment, dual-use goods, and narcotics over the past 20 years. [30] Additionally, 15 of the 32 states designated by the International Transportation Workers' Federation as FOCs are parties to the agreement. [31]

While the PSI has enabled international dialogue, established international exercises and exchange of tactics, techniques, and procedures, and increased participation

[28] Congressional Research Service, *Proliferation Security Initiative*, 2.

[29] International Transport Workers' Federation, "What Are Flags of Convenience," International Transport Workers' Federation, http://www.itfglobal.org/flags-convenience/sub-page.cfm (accessed February 6, 2013). The International Transportation Workers' Federation considers a state to be a "Flag of Convenience" state when the owner of a vessel flying its flag has no discernable connection to the country. FOC states generally have lower taxes and fees, and fewer government regulations to protect employees. The ITWF currently designates countries as 32 flag of convenience states.

[30] Congressional Research Service, *Proliferation Security Initiative*, 4. The top five countries are identified in the report as Panama, Liberia, Belize, Malta, and Honduras.

[31] Ibid., 4.

in countering WMD trafficking, measures of success have not been established and examples of successful interdictions as a direct result of PSI are difficult to conclusively identify.[32] While the strength of PSI is hampered by the absence of several countries from the agreement, including China and India, it is another mechanism to impede illicit trafficking potentials.

Economic Sanctions

The U.S. Department of Treasury is the lead agency for Counter-Threat Finance efforts. Within Treasury, the Office of Foreign Assets Control (OFAC) has more than 30 programs in place to address criminal and terrorist activity through economic sanctions.[33] These programs, originating from Presidential and Congressional mandates, target "select foreign countries and regimes, terrorist organizations, proliferators of weapons of mass destruction, and narcotics traffickers"[34] in an effort to disrupt their ability to move money and goods. Operating globally, the targeted organizations require transnational networks to support logistics, procurement, transportation, money laundering, and security which they often achieve through operations of legitimate business enterprises. The use of legitimate business as a front provides a vulnerability that OFAC seeks to exploit through regulation and sanction.[35]

The programs have been enacted through multiple executive orders that provide the Secretary of the Treasury, in consultation with the Attorney General and Secretary of

[32] Ibid., 3.

[33] U.S. Department of the Treasury, Office of Foreign Assets Control, *Impact Report: Economic Sanctions Against Colombian Drug Cartels* (Washington, DC: Government Printing Office, March 2007): iii.

[34] Ibid.

[35] Ibid.

State, the authority to designate persons and organizations as a threat to the national security, foreign policy, and economy of the United States as a result of their involvement in transnational criminal enterprises, WMD proliferation, and terrorism.[36] Once an individual or organization is designated, "any assets within the United States or in the possession or control of a U.S. person anywhere in the world, must be frozen."[37] The sanctions also provide for penalties against persons or organizations who violate or attempt to violate the Executive Orders, further reducing the ability of ITOs and FTOs to conduct global transactions to fund their operations and obtain the physical assets necessary for their criminal or terrorist purposes. While the economic sanctions are an important tool in the fight against trafficking and terrorism, the organizations sanctioned continue to subvert international norms, changing names, relationships, and methods, to conduct their business. As of December 2012, the OFAC Specially Designated Nations and Blocked Person listing was 552 pages long, reflecting the extensive network of criminal and terrorist ties.

Deterrent Effects

In order to evaluate whether Counter-Illicit Trafficking efforts and expenditures are worth the investment, it is necessary to document and evaluate the changes in trafficking methods and trafficking organizations that have occurred as a result of those efforts. Alterations in trafficking routes, method and quantities of transport, and the cost of trafficking can all be used as indicators.

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[36] Executive Order no. 13581, *Federal Register* 76, no. 144 (July 27, 2011). Executive Order no. 13224, *Code of Federal Regulations,* title 31, p. 595, p. 596, p. 597. Executive Order no. 13382, *Code of Federal Regulations,* title 31, p. 539, p. 540.

[37] U.S. Department of the Treasury, *Impact Report: Economic Sanctions,* iii.

In the mid-1990s, the United States counter-drug efforts included the Air Bridge Denial Program (ABD) to stem the flow of coca paste from Peru and Bolivia to Colombia. At the time, Peru and Bolivia were the predominant growers of coca leaf, with processing and refinement of the base product into cocaine taking place in Colombia. The coca paste was moved primarily by aircraft within the region. The ABD program involved U.S. surveillance capabilities that identified suspected drug flights to partner nation law enforcement or military assets who then attempted to interdict them. In 1995, with Peruvian president authority, the Peruvian military shot down 25 suspected drug flights.[38] As a result of the ABD program and eradication efforts in Peru, coca leaf prices dropped more than 60 percent, and the success of alternative farming programs grew.[39] A 1997 statistical analysis by Major Kimberly Corcoran at the Air Command and Staff College showed that an overall air interdiction rate of 25 percent would result in a 94 percent chance of apprehension for a pilot on his 10th flight moving illicit cargo. She further cites that during the ABD program in Peru, it was reported that drug pilots increased their fee per trip from $5,000 to $30,000.[40] As a result of the ABD program denying coca base to Colombian cocaine producers, Colombian cultivation of coca increased such that Colombia was the leading coca cultivating country in the region by the end of the 1990s.

As previously noted, the Medellin cartel dominated the Colombian drug trade during the 1980s. Their principle trafficking routes were through and over the Caribbean to south Florida and the U.S. east and gulf coasts. In the latter half of the 1980s, the

[38] Bagley, *Drug Trafficking,* 3.

[39] Ibid., 3.

[40] Corcoran, *DOD Involvement.*

United States increased pressure on the Caribbean trafficking routes and DoD assumed the lead for detection and monitoring. This increase in interdiction effort resulted in a transition to overland smuggling routes, ultimately resulting in an estimated 70 – 80 percent of Colombian cocaine being shipped to the United States through Mexico.[41] As counter-drug efforts shifted focus to the U.S.-Mexican border, and rivalries developed between Colombian and Mexican trafficking organizations, traffickers transitioned their routes back to the Caribbean, and diversified their trafficking methods by leveraging legitimate container shipping to east coast ports.[42]

With detection and interdiction efforts focused on the maritime transit zone in the Caribbean in the early 2000's, the Government Accountability Office (GAO) reported in 2008 that 90 percent of drugs leaving South America flowed through the Central American corridor, to include the western Pacific. The shifting methods facilitated by the "highly adaptive nature of drug traffickers"[43] include go-fasts, fishing vessel "mother ships" that transport drugs to open waters then distribute them to smaller vessels at sea, diverse sea routes as far southwest as the Galapagos Islands and the Central American littorals, SPSS vessels, and underground tunnels on the U.S.-Mexican border. The GAO report notes that DoD officials attribute the diversification to U.S. and international counternarcotics efforts.[44] Having identified these shifts, the United States is currently

[41] Ibid., 3.

[42] Ibid., 6.

[43] U.S. Government Accountability Office, *Drug Control: Cooperation with Many Major Drug Transit Countries Has Improved, but Better Performance Reportability and Sustainability Plans Are Needed*, GAO-08-784 (Washington, DC: Government Printing Office, July 2008), 7. U.S. Government Accountability Office, *Drug Control: International Programs Face Significant Challenges Reducing the Supply of Illegal Drugs but Support Braod U.S. Foreign Policy Objectives*, GAO-10-921T (Washington, DC: Government Printing Office, July 2010), 8.

[44] Government Accountability Office, *International Programs,* 9.

engaged with Central American partners in Operation Martillo, which has already demonstrated success through dramatic decreases in trafficking events through the littorals.[45] Remaining to be seen is the next move of the traffickers as they seek new ways to move their goods.

Examining the history of detection, monitoring and interdiction efforts leads to the obvious conclusion that the trafficking organizations are resourceful and determined to bring their product to market. As the United States and its allies increase their efforts to reduce the flow of illicit goods, the trafficking organizations have responded with innovations in routes and techniques designed to defeat the detection and interdiction effort. While one could view the innovations and continued trafficking successes as signs of losing an unwinnable war, they are in fact the signs of an effective strategy. The pressure brought forth has resulted in tactical and operational changes to the force structure and tactics, techniques, and procedures of the trafficking organizations, and continues to challenge the success rate of their trafficking events. In so challenging those successes, the U.S. strategy poses an asymmetric threat to the trafficker. With a reduced or uncertain probability of success of a trafficking event comes a reduced likelihood of FTO collaboration or mimicking of methods to avoid loss of a coveted WMD.

Summary

The United States and its international partners sustain a wide variety of counter-trafficking efforts. These efforts include maritime and land-based, physical interdiction and economic sanctions, and focus on the spectrum of illicitly trafficked materials. While they form the foundation of the asymmetric fight against illicit trafficking, it is arguable

[45] U.S. Southern Command, "Operation Martillo."

whether or not they are sufficiently robust, responsive, and affordable. Additionally, for every effort engaged in by legitimate governments to stem the flow of illicit goods, the traffickers develop a counter strategy. In Clausewitzian terms, the enemy gets a vote. With the financial incentive for ITOs and the dogged pursuit of ideological goals of FTOs, the ability of nations to completely counter illicit trafficking simply does not exist. However, continued efforts do provide a measure of unpredictability and risk to trafficking operations which is acknowledged by the organizations and displayed by constant shifts and continued innovation in routes and methods.

CHAPTER 4: ANALYSIS

Trafficking Vulnerability

The vast amount of cargo that enters the United States each year through official ports of entry, the unmonitored areas of the U.S. border, and the extensive maritime transit zone provide trafficking organizations with ample opportunity to evade detection when transporting illicit goods. The extensive networks and success of ongoing drug and human smuggling operations demonstrate the impossibility of sealing the U.S. borders to illicit trafficking. Though international efforts to combat trafficking in illicit goods, including nuclear and radiological materials, exist and continue to improve, the means to successfully evade detection will also continue to exist and adapt to counter those efforts. Through continued international partnership, investment in personnel and technology, and creative approaches to supply chain security, the United States can continue to reduce, but not eliminate, its vulnerability to trafficking of a nuclear weapon or radiological material.

Defining the WMD Threat

The threat of an attack on the United States using a nuclear weapon or radiological material can be broken into likely scenarios to aid in the assessment of probability. The most dangerous and difficult to defend scenario is the acquisition and employment of a portable nuclear bomb; the most destructive is the employment of an Improvised Nuclear Device; the most accessible is the use of radiological material. In each case, the location of an attack and the physical damage and casualties caused, while important, are likely less important than the psychological impact of the AQN

demonstrating the capability to execute such an attack. In each WMD scenario, different challenges and vulnerabilities play important roles in determining the likelihood of its employment.

A portable nuclear device presents the most dangerous and difficult to defend scenario due to its small size and destructive potential. If any of the Soviet-built portable devices still exist, are still operational, and are truly not accounted for, they represent the greatest potential for the AQN to fulfill their stated desire to obtain WMD. The relatively small size of the device and damage that it can produce present the AQN with the opportunity to conduct an attack in a major U.S. population center or economic hub, causing extensive deaths, and long-lasting damage to infrastructure and the national psyche. While a significant threat, there are several factors which make it unlikely that the AQN possesses or will obtain such a device. Russian disavowal of continued production since the demise of the Soviet Union and the acknowledged level of maintenance required to keep them operational make it unlikely that a viable Soviet-era portable weapon still exists. The cost and technical challenge of building a portable nuclear weapon render it unlikely that the AQN could produce such a weapon themselves. Finally, though pursuing a weapon since 1997, publicly stating that they possessed them in 2002, and promising to use them in the event of Osama bin Laden's death, Al Qaeda has not conducted a nuclear attack. Given their demonstrated and stated ambition to conduct attacks and cause large numbers of fatalities, the failure to execute an attack can be taken as evidence that they likely do not possess a viable weapon.

While the yield from an Improvised Nuclear Device represents the most destructive scenario for a nuclear attack, the potential for effective use of such a device

suffers from its significant logistical challenges. In addition to international measures to secure weapons-grade nuclear material, the relatively large size and required technical expertise for assembly, transportation, and detonation further complicates employment of an IND. If the AQN were successful in obtaining or building an IND, they would likely desire to move it using a method of conveyance that requires a minimal amount of handling and transfer. The logistical challenge of transporting an IND renders movement via the traditional methods of drug smugglers as unlikely. Though a SPSS or FSV has the capacity to transport such a weapon, the size and weight of an IND when combined with the rural nature of the construction and launch of these stateless vessels makes it an unlikely combination for transportation. In addition to the difficulties that would be encountered simply with having to load the weapon into the vessel, other challenges include undetected shipment from the weapon's origin; transporting the IND to the vessel's location in the remote areas of the South American jungles; and a secure location with suitable equipment for offload once the weapon reached its destination. Other favored methods of drug traffickers generally utilize smaller payloads in order to offset the expected losses experienced due to interdictions ("the shotgun approach"). Transportation by one of these methods (go-fast, panga, tunnel) would require the weapon to be disassembled, with the requisite technical expertise and facilities at the destination to assemble it upon arrival.

As a result of the challenging transportation requirements of an IND, the most likely avenue of attack using one would seem to be concealment of the weapon in a standard TEU shipping container, intermingled with licit cargo, under cover of an organization that has a legitimate commercial shipping reputation. Based on the AQN

goal to kill U.S. citizens and damage their interests, the detonation of an IND need not occur in a densely populated environment (such as downtown Manhattan). Because the yield of an IND is so large and many U.S. cargo POEs are in the vicinity of major population centers, the effect of damaging interests would be achieved. Once successfully loaded at the point of origin, a possible course of action to achieve the desired effects would be to detonate the weapon while still at the port of entry. The potential for economic, psychological, and infrastructure damage from a successful attack could likely offset the AQN desire for large numbers of casualties

While not presenting the same potential for physical damage as a nuclear device, radiological material presents a greater opportunity for acquisition, a lower cost and threshold of expertise for employment, and the opportunity to utilize the breadth of smuggling options for transportation. The commercial prevalence of radiological material and the demonstrated lack of control over radiological sources world-wide make its use attractive to the AQN. While the physical destructive potential is much less, employment of a Radiological Dispersal Device could exact a significant psychological and economic toll. The ability to use small amounts makes transportation of the material via all smuggling means more viable. Dispersal by use of conventional explosives reduces the technical complexity and associated costs of employment. It also provides an opportunity for widespread, multiple, simultaneous attacks. Finally, given the proper radiological material, Radiological Emitting Devices could be built and distributed, causing illness and contamination over a wide area while being concealed from discovery.

Is It Likely That an ITO and the AQN Would Collaborate to Traffic in WMD?

As a terrorist organization the Al Qaeda Network maintains a political agenda. By their statements, their goals are to restore the caliphate, expel the United States from the Middle East, and damage the United States physically, economically, and psychologically.[1] They attempt to accomplish this through violent attacks against the United States, its interests and allies. While they exist as a networked organization with cells inspired by the leadership but often operating independently, the cost, complexity, and potential impact of a nuclear or radiological attack would seem to necessitate the involvement of the central organization and leadership. As a result, the collaboration of individual cells with low-level criminal networks, or their engagement in low-level criminal activity, though present,[2] does not portend access to or involvement with international illicit trafficking networks. The central organization of Al Qaeda, as an enduring part of the network, requires consistent financial support. As such, their criminal activity runs from diverting charitable funds, [3,4] to extortion of drug producers in Afghanistan, to engagement in the international trafficking market. To export their product of violence, the AQN requires many of the same enablers and engages in many of the same activities as ITOs. However, while they are involved in criminal activities, their main objective remains their ideological political goals. FTOs use violence as a means to bring about political change, with a goal of removing leadership and instituting

[1] Keeney, "Identifying and Structuring," p. 1805 – 1808.

[2] Shelley, "Methods Not Motives," 315.

[3] Ibid., 311.

[4] Hutchinson, "A Crime-Terror Nexus," 1098.

their own version of governance.[5] They require money to fund their political aspirations, but do not seek it out as the reward for their activities. As their organization is ideologically motivated, adherence to the cause by its members is based upon belief in the cause, not financial loyalty that can be bought and sold to the highest bidder.[6]

In its quest to impose extreme damage on the United States, it is conceivable that the AQN would attempt to leverage the established trafficking expertise of an ITO to get a WMD into the United States and conduct an attack. The challenges of evading law enforcement and increased security at airports and seaports make it likely that the AQN would seek experienced assistance to move the weapon internationally. Moving the weapon would likely be subject to high levels of supervision to increase the chances for a successful attack, with the preferred transfer mechanism being a reliable smuggling technique with minimal interdiction risk. An ITO moving drugs or counterfeit cargo has sufficient inventory that interdiction, seizure, or loss of a percentage of cargo does not result in mission failure. Indeed, current drug trafficking mechanisms have shifted towards a greater number of smaller loads in anticipation of seizures. The AQN, on the other hand, would not have the same luxury when attempting to transport a one-of-a-kind weapon. With a history of attempting to obtain nuclear weapons and radiological material dating back almost 20 years, their willingness to leave the shipment vulnerable to interdiction is likely to be very small. As a result, while ITOs are successful at breaching the border every day with illicit cargo, the interdiction rate and increasing amount and diversity of resources dedicated to counter-trafficking are strong deterrents to an AQN – ITO partnership.

[5] Shelley, "Methods Not Motives," 315.

[6] Ibid., 314 – 315.

ITOs with the capacity to serve as partners or surrogates for terrorist organizations are necessarily large organizations with enduring characteristics. Establishing and maintaining the networks to conduct transnational illicit trafficking requires complex planning and execution strategies. In simplistic terms, an ITO, whether a TCO or DTO, exists to make money.[7] The organization has a product, legal or illegal, to get to a market to sell for profit. The enduring nature of the enterprise means that the ITO relies not only on a customer base to buy the products, but often on some level of complicity from law enforcement, government officials, and local populations to conduct their business. An ITO profits from disjointed or co-opted law enforcement and interdiction efforts between countries, and between organizations within a country, exploiting the resulting gaps and seams to conduct their business.[8]

With myriad successful trafficking mechanisms and profit as a motive, it is tempting to assume that an ITO would view movement of a WMD for an FTO purely as a business arrangement. However, movement of a WMD and a subsequent successful attack by an FTO would impact the ITO in multiple ways. Because the ITO relies on having customers to purchase their product at the other end of their supply chain, the successful use of a WMD and its consequent deaths, damage, and disruptions to the marketplace would negatively impact the ability of the ITO to sell their product and decrease their profitability. As ITO success often relies on complicity of law enforcement and government officials and these officials often profit financially from their association with the ITOs, the officials have motivation to continue to protect the destination

[7] Hutchinson, "A Crime–Terror Nexus?" 1101.

[8] Ibid., 1102-1103.

market.[9] If their actions to conceal the activities of an ITO resulted in mass casualties, destruction, or major disruptions of the society within which they exist, it is likely that they would not be willing participants.

Finally, the major impediment to trafficking is law enforcement activity. The introduction of WMD into the trafficking market would be likely to bring greater state-to-state cooperation and increased use of military assets to detect and interdict illicit shipments, again increasing risk to traffickers and decreasing their profitability. As terrorist organizations increasingly turn to criminal activity to support their efforts, there exists the possibility that an FTO could establish a relationship with an ITO to move non-WMD illicit goods. Over time, that relationship could result in unknowing exploitation, with an ITO unwittingly moving a WMD under the impression that it is simply another shipment of illicit goods. The potential size, cost, and danger of such a device appears to make it unlikely that the AQN would transport it without additional precautions, ultimately resulting in the ITO becoming aware of the significance of the cargo and more likely to discover its true nature.

Are Illicit Trafficking Efforts Effective?

Since the 9/11 attacks, the United States has increased its focus and assets on prevention of illicit trafficking in nuclear and radiological material. Part and parcel to those efforts has been a continued emphasis on countering trafficking in illicit drugs, humans, weapons, and cash to discourage their employment for trafficking in WMD. While it has been argued and demonstrated that success in countering illicit trafficking and reducing the supply of drugs is not effectively measured in terms of the number of

[9] Shelley, "Methods Not Motives," 315.

arrests, or quantity and value of drugs and money interdicted, a valid indicator of success in deterring the importation of a WMD is the absence of a successful attack in the United States over the course of the past 11 years despite overt threats and public statements of intent by the AQN. The continued alteration of trafficking methods indicates that the pressure brought to bear by United States and international efforts influences the trafficking decisions of transnational organizations. Continued diverse efforts to interdict and deter trafficking serve as weapons in the arsenal to defend against importation of a WMD. A terrorist organization that has sought for almost 20 years to obtain and use a nuclear or radiological weapon will likely want to take all means necessary to ensure that it can be delivered and employed with minimal risk of interdiction. The efforts to combat illicit trafficking have ensured that the routes employed by smugglers are subject to constant pressure, with concomitant risk of interdiction and loss of cargo. Ensuring this risk continues to be present will discourage the use of traditional smuggling methods to transport a one-of-a-kind asset.

Summary

The geographic vulnerability of the United States and the abundant successful methods of trafficking ensure that trafficking organizations will continue to find and exploit gaps in counter trafficking efforts, ultimately providing an avenue for the AQN to attempt to bring a WMD into the United States. While the existence and viability of a suitcase bomb is doubtful, it cannot be completely discounted, and represents the most dangerous threat of a nuclear weapon attack due to its small size and relative destructive power. An Improvised Nuclear Device, while larger and assessed to be within the capability of the AQN to construct, represents significant technical and logistical

challenges for acquisition of nuclear material, construction and transportation of a device to a likely target area. Exploitation of vulnerabilities in the international shipping industry provides the most likely scenario to transport a weapon into the United States, with an attack in a port of entry to achieve desired physical, economic, and psychological effects. The opposing organizational philosophies and relative tolerances for interdiction of the products being moved make it unlikely that the AQN would seek to partner with an ITO, while an ITO would be unlikely to willingly move a WMD that would ultimately undermine their business enterprise. Finally, while not providing a solution to the problem of illicit smuggling of drugs, humans, weapons, cash, or merchandise, ongoing detection and interdiction efforts have resulted in behavioral changes in trafficking organizations and thus far prevented the introduction of a WMD into the United States.

CONCLUSION

The United States has tremendous vulnerabilities to attack by terrorist organizations. The terrorist organizations that seek to do harm to the United States and its citizens continue to be ideologically motivated and a desire for retribution fuels their pursuit of a weapon of mass destruction and their search for a method to conduct another attack. Proliferation of nuclear weapons and technology and the availability of radiological material ensure that there will always be the possibility of their acquisition by a terrorist organization. The potential death, destruction, financial and psychological damage of an attack with a nuclear or radiological device would forever change the character of the United States, its citizens, and the world. The volume of licit cargo that arrives in the country each day presents boundless opportunities for concealment of dangerous weapons and malicious actors. The land and sea borders are too expansive to even contemplate a method to effectively control them or prevent illicit cargo from being transported into the country. The United States will continue to be targeted by those who seek to do it harm, and needs to continue to be aggressive in countering the threat of attack.

It has been more than 11 years since the 9/11 attacks, and more than 17 years since the first intelligence assessment that Al Qaeda was attempting to obtain nuclear weapons. The efforts that the United States and its international partners have engaged in to prevent the spread of nuclear weapons have been successful thus far in preventing a non-state actor from obtaining or using one. Detection and interdiction efforts aimed towards illicit trafficking of drugs, humans, weapons, and cash have altered trafficking behaviors and continue to result in significant seizures of illicit goods. When the

traffickers have altered their tactics to respond to interdiction efforts, the United States and its allies have responded in kind, adding personnel, assets, and technology to counter. The resulting seizures have increased the cost and risk of trafficking, and forced traffickers to continuously alter trafficking methods to avoid or mitigate the impact of the loss of their shipments. While criminal organizations that traffic illicit goods can absorb the losses from interdiction with increased shipments, the loss of a potentially one-of-a-kind weapon through interdiction would be a tremendous blow to Al Qaeda. Nuclear and radiological detection and interdiction efforts focused on licit cargo shipments have added a layer of defense and element of uncertainty to any attempt to covertly ship illicit materials.

While often converging in methods of crime and violence, Illicit Trafficking Organizations and the Al Qaeda Network remain ideologically separated. Motivated by financial gain, ITO engagement with Al Qaeda to provide for illicit services and trafficking of goods would seem a natural symbiosis. However, in the case of nuclear weapons or radiological material, the negative consequences of any resulting attack would undermine the business enterprise of an ITO making it unlikely that they would willingly provide the support required to move the device or material. ITOs and FTOs share many of the same needs for accomplishing their objectives. As a result of the specialized nature of the tasks required to make an illegal, international enterprise operate, a natural synergy develops between terrorists and criminals to outsource tasks that are not within their expertise. Self-interest and self-preservation limit this nexus when the ultimate end state of an action could result in harm to either organization.

Continued CIT Efforts Are Essential Preventing a WMD Attack

The combination of U.S. and international counter-trafficking and counter-proliferation efforts have thus far prevented a terrorist organization from obtaining or employing a weapon of mass destruction. Robust Counter-Illicit Trafficking programs are essential components of the U.S. strategy to counter the smuggling of WMD, specifically nuclear devices or radiological material, into the United States by the AQN to conduct an attack on the U.S. homeland. The breadth of area to be defended and the multitude of avenues of approach make building an impenetrable shield of interdiction impossible. The coordinated use of domestic border and port security, international partnerships, and international non-proliferation measures are essential building blocks in this strategy. While technology is an important piece of the puzzle to interdict illicit shipments, continuing to build an understanding of the overlapping areas of interest of terrorist and trafficking organizations enables targeted employment of assets and collection of intelligence to prevent the successful acquisition, movement, and employment of a nuclear or radiological WMD. Continued investment of resources is necessary to continue to maintain a deterrent against cooperation between the AQN and ITOs. While expensive to dedicate the resources required to maintain the efforts, the United States and international community cannot afford the cost of failure as long as the threat exists.

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LIST OF ACRONYMS

ABD	Air Bridge Denial
ACTT	Alliance to Combat Transnational Threats
AQN	Al Qaeda Network
CBP	Customs and Border Protection
CIT	Counter Illicit Trafficking
CONUS	Continental United States
C-TPAT	Customs-Trade Partnership Against Terrorism
DoD	Department of Defense
DTO	Drug Trafficking Organization
D&M	Detection and Monitoring
FOC	Flag of Convenience
FSV	Fully Submersible Vessel
FTO	Foreign Terrorist Organization
GAO	Government Accountability Office
HEU	Highly Enriched Uranium
IND	Improvised Nuclear Device
ITO	International Trafficking Organization
JIATF-S	Joint Interagency Task Force-South
kt	kiloton
MT	Metric Ton
NSS	National Security Strategy
OFAC	Office of Foreign Asset Control
POE	Port of Entry
PSI	Proliferation Security Initiative
RADM	Rear Admiral
RED	Radiological Emitting Device
RDD	Radiological Dispersal Device
SADM	Special Atomic Demolition Munition
SPSS	Self-Propelled Semi-Submersible
TCO	Transnational Criminal Organization
TEU	Twenty Foot Equivalent Unit
UNODC	United Nations Office on Drugs and Crime
US	United States
USCG	United States Coast Guard
USSOUTHCOM	United States Southern Command
WMD	Weapon of Mass Destruction

LIST OF FIGURES

VITA

Commander Jonathan Kline is a 1994 graduate of Carnegie Mellon University with a BS in Mechanical Engineering, a 2002 graduate of the United States Test Pilot School, and a 2005 graduate of the University of Tennessee with an MS in Aviation Systems. A helicopter pilot by training, he has more than 2,800 flight hours in fixed and rotary wing aircraft. He commanded Helicopter Sea Combat Squadron TWO SIX in Norfolk, Virginia, and is currently a student at the Joint Advanced Warfighting School at the Joint Forces Staff College.